

NOVOciti VOLT

INTRODUCTION AND USER'S GUIDE

**ANADOLU
ISUZU**

Revision No: 00



Symbolic image of the Novociti Volt
vehicle

PREFACE

This owner's manual has been prepared to provide general information about the efficient and most economical use of your Novociti Volt vehicle. We strongly recommend that you read the information provided carefully and follow all warnings. We would like you to know that our company will not be responsible for material and moral problems and damages that may occur in case of non-compliance with the specified.

When you need more detailed information about your vehicle, you can contact the authorized dealer and authorized service.

Keep the user manual in the vehicle at all times.

Due to our continuous effort to improve our vehicles, changes can be made in form, equipment and technique. The information, illustrations and specifications herein are based on the latest product information available at the time of publication of the manual and are provided by Anadolu Isuzu A.Ş. reserves the right to change without prior notice.

Thank you for choosing this product. We wish you good driving.

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CONTENTS

	PAGE
1. INTRODUCTION	1
Chassis number	3
Identity Plate	3
Vehicle Warranty	5
Options	5
Suggestions / Warnings	6
2. GENERAL INFORMATION	9
Before Driving	10
Starting the Engine	12
Stopping the Engine	12
Opening and Closing Doors	13
Emergency exit	13
3. CONTROLS AND INDICATORS	14
Front Control Panel	15
Side Control Panel	23
Indicator and Warning Lights Panel	24
Line Board Control Panel	30
4. VEHICLE EQUIPMENT	31
Driver Seat	32
Passenger Seats	33
Digital Clock	33
Windscreen Roller Blind (Option)	34
Driver's Side Roller Blind (Option)	34
Radio & MP3 Player (Option)	34
Heating and Cooling System	35
Digital Tachograph (Option)	43
Diagnostic Socket	44
Mirrors	44
Dash Camera (Option)	45
Rear View Camera System (Option)	45
Mobile DVR (Digital Recorder-Option)	45
Digital Line Board	46
Handles	46
Stop Buttons	46
Wheelchair Space	47
Disabled Passenger Ramp	47
Steering Adjustment	48
Horn	48
Pedals	48

Electrical Electronic System And High Voltage Components	49
Electrical System (Standard Vehicle)	50
Electrical System (Option)	50
Battery System	51
Charging Station System , Filling	53
Cluster Charge End Warning	53
Charging Time	53
Using Cable And Socket For	54
Charging Driver Rating System	54
PDU (Power Distribution Unit)	54
Quick Charge Control Unit (VCCU)	55
Built-in Charger (OBC)	56
DC/DC converter	60
Charging Socket on Vehicle (CCS2)	60
Electric Radiator	61
High Voltage Heaters (Hv Heater)	61
Electric motor	62
Engine Control Unit (MCU)	63
Batteries	65
Tire Inflator Set	66
Electronic Brake System (EBS)	67
Electronic Stability Control (ESC)	69
Electronic Brakeforce Distribution (EBD)	74
Acoustic Vehicle Alert System (AVAS)	74
Regenerative Braking	75
Engine Room Fire Detection System	75
Engine Room Fire Detection System And Control Unit	76
5. SERVICE AND MAINTENANCE	78
Cleaning the Vehicle	79
Towing the Vehicle	80
Engine Cooling System and Antifreeze Filling	81
Heating and Air Conditioning Systems Line Filling and Air Bleeding Operations	82
Battery Cooling System Antifreeze Refill	83
Differential Oil Change	84
Checking Brake Discs and Pads	85
Steering Hydraulic Tank	85
Smart Air Dryer	86
Emptying the Water Accumulated in Air Tanks	86
Electric Air Compressor	87
Glass Fountain Water Tank	88
Replacing Windshield Wipers	89
Fuse/Relays	90
Precautions for Battery Usage	90
Jack Use and Tire Change	92
Easy Serviceability	94
Corrosion & Preventive Methods	94
Periodic maintenance	96
6. TECHNICAL INFORMATION	100
7. AUTHORIZED SERVICES	103

1. INTRODUCTION



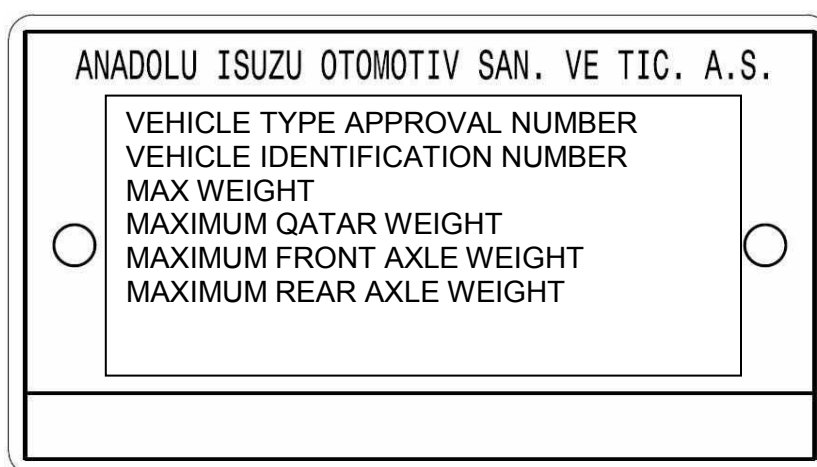
Symbolic image of the Novociti Volt
vehicle

CHASSIS NUMBER



The chassis number of the vehicle is located on the profile behind the right front wheel.

IDENTIFICATION PLATE



The identification plate is on the driver's seat platform at the front door entrance. It contains information on the identification plate such as VIN number, maximum axle load total, maximum front axle load and maximum rear axle load, vehicle model, engine type, drive system, wheelbase, manufacturing site.

VEHICLE IDENTIFICATION NUMBER SYSTEM																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
N	N	A	M	0	B	F	L	A	G	B	0	0	0	0	0	1
(SAMPLE)																
1 - 3	PRODUCER INTERNATIONAL IDENTITY CODE					NNA:	(AIOS) ANADOLU ISUZU AUTOMOTIVE INDUSTRY AND TRADE JOINT STOCK COMPANY									
4	MODEL					M:	BUS GROUP									
5	NUMBER OF SEATS					0:	INDEPENDENT OF THE NUMBER OF SEATS									
						1:	17 PASSENGER SEAT									
						2:	18 PASSENGER SEAT									
						3:	19 PASSENGER SEAT									
						4:	20 PASSENGER SEAT									
						5:	21 PASSENGER SEAT									
						6:	22 PASSENGER SEAT									
						7:	23 PASSENGER SEAT									
						8:	24 PASSENGER SEAT									
						9:	25 PASSENGER SEAT									
6	MODEL EXTENSION					B:	CITY MUNICIPAL TYPE									
						U:	INTERCITY TYPE									
7	ENGINE TYPE					F:	FPT - NEF4 (OBD-C)									
						T:	FPT - NEF4 (OBD-D)									
						U:	FPT (OBD-E)									
						E:	ELECTRIC VEHICLE									
8	DRIVE SYSTEM					L:	LEFT STEER									
						R:	RIGHT STEER									
9	WHEEL DISTANCE					A:	4259 mm									
10-11	PRODUCTION PLACE					GB:	AIOS GEBZE FACTORY									
12-17	PRODUCTION ORDER NO															

VEHICLE WARRANTY

The warranty period and conditions of the vehicle are specified in the "Warranty Certificate" supplied with the vehicle. For detailed information about the warranty conditions and situations out of warranty, please refer to the "Warranty Certificate".

OPTIONS

Apart from the standard features of the vehicle, the following options can also be applied to the vehicle at any time. These features may vary.

- Reversing camera
- Front view camera
- In-car camera
- Camera Monitor
- Recorder (DVR)
- Windshield roller blind (Electric control or Manual control)
- Driver's side roller blind
- Electrically controlled horn type mirrors
- Driver's cabin (Closed)
- Information panel for passengers
- USB Charging Socket for Passengers
- Radio&MP3 player
- Microphone (Swan&swan type) & Amplifier
- Multimedia Set (Torpedo)
- DVD player
- CD player
- Monitor / LCD

SUGGESTIONS / WARNINGS

- For the spare key or in cases where the key is lost, you must report the serial number information on the ignition key to the authorized service, so make a note of the serial number information.
- Do not load your vehicle above the passenger capacity, do not change the seats. Our factory is not responsible for the problems that may arise due to the change in the load balance in the vehicle.
- Check the tire pressures frequently, always make sure they are at the correct value.
- Check the high and low beam settings, do not travel at night with defective headlights.
- Check the brake, parking and license plate lights frequently, do not set off with defective or mud-covered brake, parking and license plate lights.
- In order to ensure maximum performance in your vehicle, take care to have all maintenance done on time and regularly at authorized services.
- Liquids such as waste oil, brake fluid, antifreeze, waste filters and scrap batteries that you use in your vehicle cause great harm to the environment when they are thrown away indiscriminately. Pay attention to the fact that such hazardous wastes can be disposed of in accordance with environmental regulations.
- It is extremely dangerous to have empty cans, empty bottles or other items rolling on the floor, make sure the floor is clean and tidy, especially around the driver's seat.
- Before starting the engine, make sure that there are no flammable materials under or around the vehicle. The presence of similar materials may cause a fire.
- Before driving; Be sure to adjust the seat, steering wheel and mirrors to positions that provide the correct driving position for you.
- Make sure to wear your seat belt.
- Make sure that the windshield and side windows are clean. Keep the curtains in such a way that they do not hinder your vision and driving.
- Drive your vehicle by paying attention to traffic rules and road condition.
- If you feel any abnormality in a tire while driving, stop immediately in a safe place. If you drive with a flat tire, too much force can be applied to the wheel studs, causing the bolts to break and the wheel to come off.
- Drive at a constant speed as much as possible.

- If a warning light comes on, do not ignore it and continue driving. Note that you must take corrective action by referring to the description of meters, warning lamps and indicator lights.
- When the vehicle malfunctions while driving, turn on the hazard warning flashers and immediately pull the vehicle to a safe place where it will not interfere with traffic. Install warning triangles to alert other vehicles of your presence. Get other passengers out of the vehicle and have them wait in a safe place. Inform the nearest authorized service.
- Do not use water to wash the rear compartment, side compartment and radiator directly.
- It is strictly forbidden to use high pressure water to wash the rear electrical component room.
- Only the outer part of the vehicle body can be washed with a low pressure water gun.
- High Voltage must be disconnected before working on high voltage components.
- Before working in high voltage systems, it is necessary to wear safety equipment against all kinds of situations.
- Safe isolation from high voltage must be verified before work.
- Always pay attention to high and low voltage cables during operation.
- The work area should be isolated from normal areas.
- Always follow instructions and labels to avoid undesirable results.

Electrical works in HV systems of vehicles

- Electrical work cannot be started without taking protective measures against electric shock, short circuit and fault arcs.
- Generally, electrical systems and moving parts of equipment may not be worked on. To this end, these systems and equipment must be rendered inactive before and during operation.

Before starting work in case of any malfunction:

- Disconnect power from the system.
- Turn off the ignition.
- Remove the service/maintenance plug and/or turn off the main battery switch
- Remove the fuse.
- Make sure the system cannot be reactivated.
- Keep the ignition key safe to prevent unauthorized access.
- Keep the service/maintenance plug secure to prevent unauthorized access and/or use a lockable cover to ensure that the main battery switch cannot be reactivated.
- Make sure the devices are de-energized using a suitable voltage tester (note the voltage range!).
- Ground and short-circuit the system.
- Secure or insulate adjacent moving parts.

- These five rules are vital for safe working. The rules must be followed in the order usually specified.
- The five safety rules are general to all electrical power systems, regardless of the actual voltage level. Certain lower restrictions may apply for systems with rated voltages up to 1000 V. The first three rules must be followed when working on a high voltage system. Whether the fourth and fifth rules will also be applied should be determined on a case-by-case basis.

The following safety equipment must be used in cases where operations are to be carried out on the vehicle..

Safety equipments				
				
Protective Glasses	Protective Gloves	Protective Headphone	Protective shoes	Protective clothing

2. GENERAL INFORMATION

BEFORE DRIVING

Proper maintenance and driving are important not only in extending the service life of your vehicle, but also in the battery and electric motor.

Check Daily

For safe and comfortable driving, record the distances traveled and the condition of the vehicle while driving. Perform inspections at appropriate intervals and perform maintenance according to inspection findings. If an inspection reveals an abnormality or the vehicle has had an abnormality from previous driving, take the vehicle to the nearest Isuzu Dealer before being driven again.

Daily Control Checklist:

1. Checking components that showed abnormalities during previous driving
2. Electric motor coolant level
3. Power steering fluid level
4. Fan hydraulic fluid level
5. Brake system air pressure level
6. Brake pedal release
7. Exhaust noise from brake valve
8. Increase/decrease of air pressure level
9. Operation of meters, indicators and warning/indicator lights
10. Parking brake
11. Windshield washer fluid spray status and windshield wiper activity
12. Windshield washer fluid level
13. Steering wheel clearance and mounting condition
14. Operation of horn and turn signal lamps
15. Battery charge level
16. Lighting, flashing or damaged lights
17. Battery fluid level
18. Condensation in the air tank
19. Electric engine coolant, brake fluid, power steering fluid, fan hydraulic fluid leak
20. Air pressure
21. Cracks and other damage
22. Abnormal wear
23. Tread depth of tires
24. Disc wheel assembly status
25. Brake efficiency
26. Checking the engine at low speeds and accelerations

Keep The Floor Above The Driver's Seat Clean And Tidy



- It is extremely dangerous for empty cans, empty bottles or other items to roll on the floor, as they can get caught under the brake pedal and prevent the brake from being applied. It is also important to properly lay the mats for the pedal to work properly. Incorrectly installed mats prevent free movement of the pedals.
- Do not use the instrument panel pocket or top as a place to store items that could roll over or hinder your ride.

Choose Your Suitable Shoes for Driving

Choose shoes that allow the pedals to work properly while driving. The use of shoes suitable for riding may cause an accident.

Stop And Parking

- Choose a flat place where stopping and parking is allowed and the vehicle will not interfere with traffic. Firmly pull the handbrake and make sure the vehicle does not move.
- Remove any dirt from the vehicle's light lenses and reflectors to ensure the vehicle is visible from other vehicles.

Applying the Parking Brake

Do not apply the parking brake until the vehicle has come to a complete stop, except in an emergency. Applying the parking brake before the vehicle comes to a stop could cause the tires to lock or the vehicle to spin, resulting in an accident.

Parking Safely on a Slope

Avoid parking your vehicle on slopes as much as possible and choose a flat place. If it is unavoidable to park your vehicle on a slope, make sure that you apply the parking brake fully, that the vehicle does not move, and support the underside of the wheels with chocks for added safety. Release the steering wheel so that the vehicle is stopped by an obstacle (e.g. curb) in the event of movement.

STARTING THE ENGINE



The main switch must be in the "ON" position. Turn the ignition by turning the ignition key to the "M" position. There is no need for any starting command by turning the ignition key to the "D" position as in diesel vehicles. The green "Drive Ready" text on the instrument screen indicates that the vehicle is ready for action. Afterwards, the desired gear is selected and action is taken.



If the green "Drive Ready" text does not appear on the display screen, the vehicle will not start, contact the authorized service.



STOPPING THE ENGINE



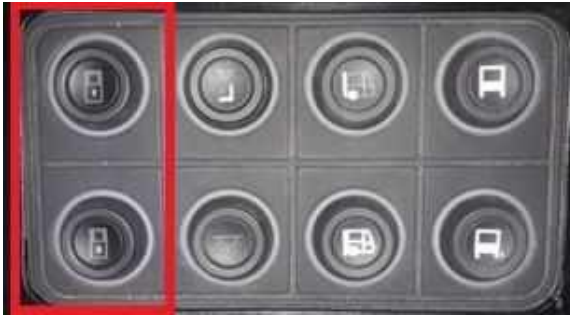
Turn off the engine by turning the ignition key to the "St" position.

Do not turn off the main switch within 70 seconds when the ignition switch is on and after the ignition switch is turned off.



If the vehicle will be parked for a long time (more than 2 days), turn the main switch off.

OPENING AND CLOSING THE DOORS



Opening Doors in Emergency Situations

There are on/off switches on the front control panel for opening/closing the doors from the inside. The doors close automatically when the vehicle speed exceeds 5 km/h. Front door opens/closes from outside with remote control.



There are air release valves on the doors for emergencies. If necessary, evacuate the air by turning the valve clockwise and open the doors by pulling inward.



There are air release valves on the sides of the doors for opening the doors from the outside when necessary. Turn the valve clockwise and push inward to open the doors.



It also has a red on/off lock on the door to open the door when the vehicle is locked from the outside with the key or there are passengers inside. When necessary, this lock is turned in the direction of the arrow, the air release valve on the door is turned to release the air and the door is opened by pulling inward.

EMERGENCY EXIT



In emergency situations, an emergency exit can be provided by breaking the windows on the right and left sides of the vehicle with the help of the emergency hammer.

3. CONTROLS AND INDICATORS

FRONT CONTROL PANEL

KEYS ON THE LEFT SIDE

Exterior Mirror Heating Switch



The outside rear view mirror heating is activated when the lower part of the key is pressed. It is deactivated when pressed a second time. If the heating is not switched off by the driver, it is automatically switched off after 20 minutes.

Driver Side Window Heating Switch



The driver's side window heating is activated when the lower part of the key is pressed. Heating operates in the form of 8 minutes of operation and 4 minutes of standby. During this 4-minute waiting period, the driver cannot start the system again even if he wants to.

Line Plate Switch



The line plate is activated when the lower part of the switch is pressed, deactivated when the upper part is pressed.

LCD Display Switch (Option)



Pressing the lower part of the switch turns on the LCD screen. The LCD screen turns off when the top of the switch is pressed.

Emergency Key



To use the emergency switch, the red safety cover on it is opened by lifting upwards. When pushed forward, the electricity in the system is cut off, the engine stops, all interior lights and flashers are turned on, the door keys are in an active state. System returns to normal when pulled back.

Lighter



The lighter is pushed against the inner heat element and automatically pops out when heated.

Regenerative Key



Pressing the switch deactivates regenerative braking with the brake pedal. Pressing the switch again activates regenerative braking on the brake pedal.

Stall Brake Switch



If the automatic mode is active, the parking brake will be active in the following conditions;

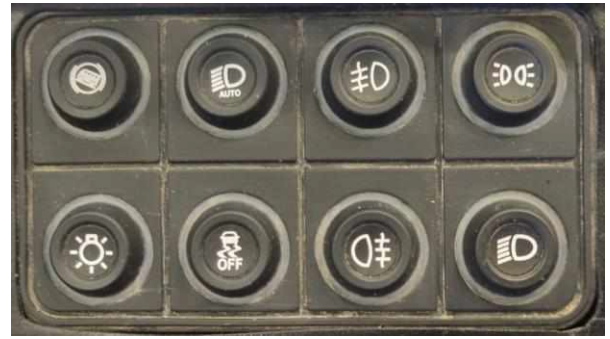
- Vehicle speed must be below 3 km/h,
- If any door is open,
- If any tailgate is open,
- If the rear engine cover is open,
- If the key is active,
- If the lift is open, the stall brake is active.

The parking brake is disengaged by pressing the accelerator pedal after all doors and covers are closed.

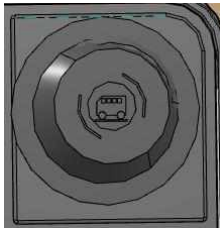
If manual mode is active

- If the key is active,
- If the lift is open and the vehicle speed is below 3 km/h, the parking brake is activated.
- Automatic or manual selection of the Stall Brake System can be made from the cluster.

Left Side Keypad

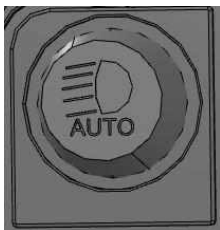


Hill Start Assist Switch



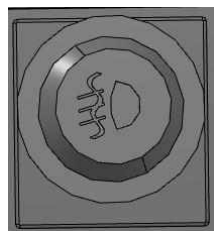
It activates or deactivates the hill start system when the key is pressed.

Auto Headlight Switch



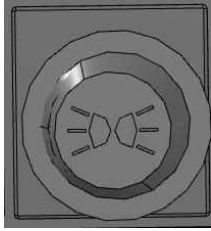
Automatically sends the command to activate / deactivate the dipped beams in dark / bright environments.

Front Fog Lamp Switch



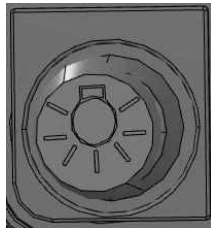
The front fog lights come on when the key is pressed. Once pressed it turns off.

Parking Light Switch



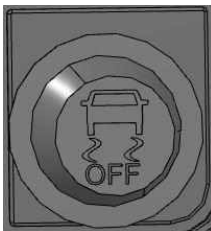
The parking lights come on when the key is pressed.

Main Lamp Switch



The key is for regulation and there is no function.

ASR (ESP/ESC) Revocation Key



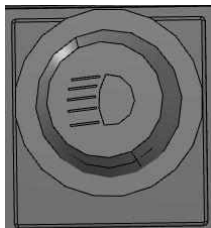
Used to cancel the ASR (ESP/ESC) system.

Rear Fog Lamp Switch



The rear fog lamps come on when the key is pressed.
Pressing once again turns it off.

Low Beam Switch



Used to activate the dipped beam headlights.

Motorized Curtain Switch (Option)



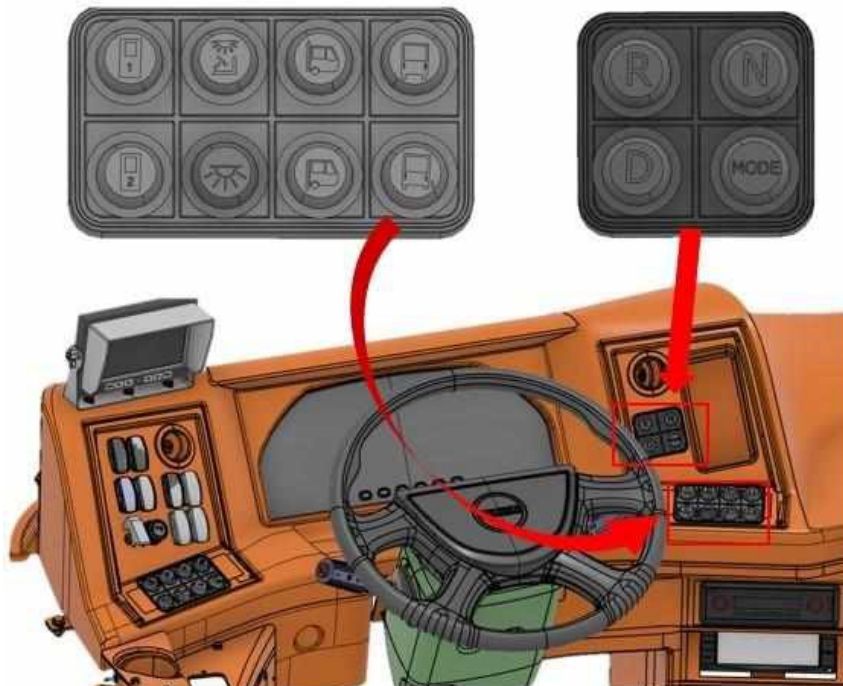
As long as the lower part of the switch is pressed, the driver's curtain goes down, as long as the upper part of the switch is pressed, the driver's curtain goes up.

Pictogram Key (Option)



If any of the doors are open when the lower part of the switch is pressed, the pictogram plates will light up. Pictogram plates turn off when the top of the switch is pressed.

SWITCHES ON THE RIGHT SIDE



Flasher Switch



Pressing the lower part of the switch turns on the flasher, pressing the upper part turns the flasher off. When the flasher is on, the indicator lamps on the instrument panel and the function lamp in the key come on and an audible warning is given along with all the vehicle's turn signal lamps.

Front Door Control Switch



The front door opens/closes when the key is pressed. The key is not activated when the vehicle speed exceeds 5 km/h.

Rear Door Control Switch



The back door opens/closes when the key is pressed. The key is not activated when the vehicle speed exceeds 5 km/h.

Driver's Light Switch



Sends command to activate driver lamp.

ELC High Drive Switch



This switch is used to drive the vehicle at a higher than normal driving level.

ELC Normal Drive Switch



This key is used to drive the vehicle at normal driving level.

Interior Roof Light Switch



The vehicle sends a command to activate the interior lighting.

ELC Low Drive Switch



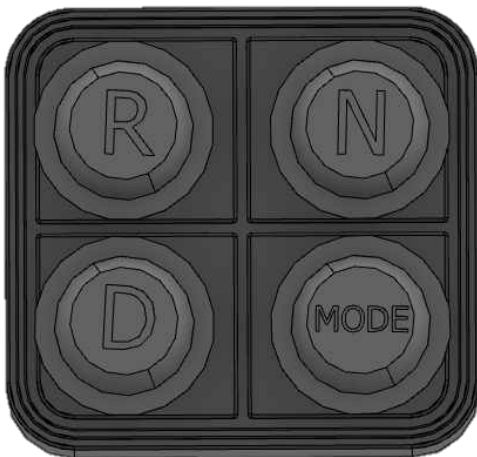
This switch is used to drive the vehicle at a lower driving level than normal.

ELC Right Tilt Switch



The vehicle tilts to the right when the key is pressed.

Gear Selector (Electric vehicles)



The vehicle can be used in automatic and manual mode.

The gear selector features are as follows:

D: Forward gear N: Neutral

R: Reverse gear

Mode: Performance/economy mode selection

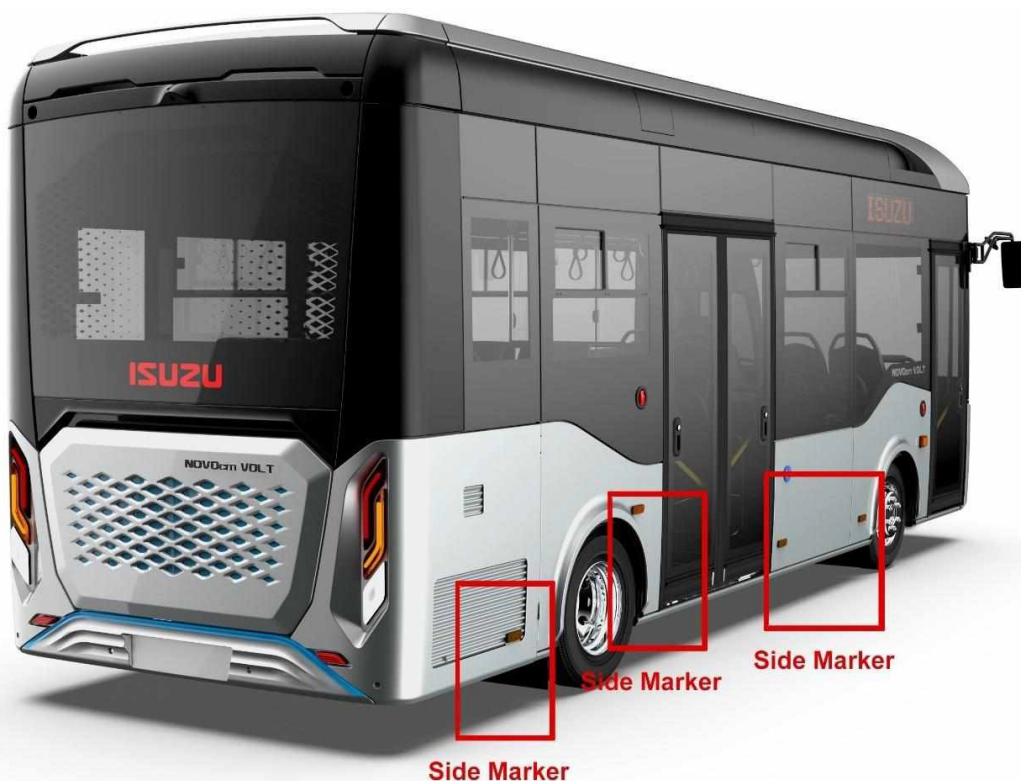
Signal and Wiper Arm



The lever signals to the left when it is down and to the right when it is up. The first turn will activate the intermittent wipers, the second turn the wipers at normal speed, the third turn the high speed wipers. The sprinkler works when pushed towards the steering wheel. The horn is activated when the button on the end is pressed.

Signal functions:

1. For the lane change signal, the lever is moved slightly towards the relevant direction.
2. If the right or left signal lights are active and the quad button is pressed, the quads will be active.
3. If the right turn signal light is active and the quad button is pressed, the quads will be active (without turning the quads off), then the right turn signal arm will be active, then the right turn signal light and the right side marker lights will be active.
4. If the left signal lamp is active and the quad button is pressed, the quads will be active (without turning off the quads), then the left signal arm will be passive, then the right lamp and right side marker lamps will be active.
5. If the quads are active and then the right or left turn signal lever is activated, the right or left turn signal lights will be active.



Regenerative Brake Lever

This lever activates the Regenerative brake. The arm consists of 4 stages. You can adjust the braking amount by pulling the lever towards you.



SIDE CONTROL PANEL

Handbrake



The handbrake system must be air-type and spring-loaded. The handbrake lever is on the left side of the control panel. When the vehicle is stopped, the parking brake lever is pulled back, the lever must be locked in the lower position. To release the brake, the lever at the bottom of the lever is pulled slightly upwards and the lever is left forward. There is a warning light on the instrument panel that indicates whether the handbrake system is active.

When the parking brake system is activated, the gear shifts to the N position automatically and the gear selector on the LCD starts to flash. The gear will remain in the N position even when the parking brake is disengaged. The Drive/Reverse position must be selected again to drive the vehicle. For driving (vehicle active), if the brake air is insufficient (below 6 bar) when the parking brake is disengaged, the warning light turns red. Wait for this light to go out before moving.

Emergency Emergency Brake Release Valve



It is located on the side control console, to the left of the driver. In the event that the vehicle is left without air due to a breakdown on the road, it is held by turning it without releasing the valve with the left hand (it returns to its original position when the handle is released because it is spring loaded), and the vehicle is pulled to the safety lane by holding the steering wheel with the right hand. When the handle is turned, the air reserved in an additional tank is sent to the hand brake bellows, thus releasing the handbrake.

Usb Phone Charger




























There is a USB socket charger on the side control panel where the driver can charge his mobile phone. There are two sockets, normal and fast charging.

INDICATOR AND WARNING LIGHTS PANEL



İkon	İkon Adı	Renk	Görevi
	ASR Off	Amber	ASR sistemi devre dışı bırakılmışsa, ikaz aktif olur.
	ASR On	Amber	ASR sistemi aktif olduğunda, ikaz aktif olur.
	Balata ikazı	Amber	Fren balatalarından herhangi birinin kalınlığı az olduğunda, ikaz aktif olur.
	Hat Levhası Aktif	Amber	Hat levhasının aktif olduğunu belirtir.
	CC Aktif	Yeşil	Cruise control set edilip, aktif olduğunda, ikaz aktif olur.
	ELC Uyarı	Amber	ELC' den gelen turuncu uyarı ikazdır. ELC diagnostikten hangi hataların olduğu kontrol edilmelidir. Ayrıca ELC sistemi hareket ettiğinde ikaz yanıp söner, bu bir anıza değildir.
	ELC Uyarı	Kırmızı	ELC' den gelen kırmızı uyarı ikazdır. ELC diagnostikten hangi hataların olduğu kontrol edilmelidir.
	Hillholder Aktif	Yeşil	Yokuş kalkış desteği sistemi kullanılmak üzere aktif edilmişse, ikaz aktif olur.
	Batarya Yönetim Sistemi Amber Uyarısı	Amber	Batarya yönetim sisteminde hata olduğunu belirten uyarıdır.
	Batarya Yönetim Sistemi Kırmızı Uyarısı	Kırmızı	Batarya yönetim sisteminde hata olduğunu belirten uyarıdır. Araç durdurulmalıdır.
	Engelli Rampası Açık	Kırmızı	Engelli rampası açıldığında ekranda beliren uyarı ikazıdır.

	ABS Turuncu İkazı	Amber	Fren modülünden gelen amber uyarı ikazıdır. İkaz aktif olursa acilen motor durdurulmalıdır ve ABS diagnostikten hangi hataların olduğu kontrol edilmelidir.
	Elektrik Motoru Uyarısı	Kırmızı	Elektrik motorunda hata olduğu anlamına gelen uyardır. Araç hemen durdurulmalıdır.
	Yangın Uyarı	Kırmızı	Yangın algılama sistemi aktif ise uyarı verir. İkaz aktif olursa acilen motor durdurulmalıdır.
	Emniyet Kemerli Uyarısı	Kırmızı	Emniyet Kemerli Uyarısıdır. Araç 20km/s altında ise sadece görsel; üstünde ise hem görsel hem sesli ikaz verir.
	Kapı Valfi Uyarısı	Kırmızı	Kapı acil durum valfi açık veya kapı hava sisteminde hava yeterli değilse uyarı verir.
	Direksiyon Pompa Anzası	Kırmızı	Direksiyon pompası anzası oluştuğunda aktif olur.
	ECAS Kırmızı Uyarısı	Kırmızı	ECAS sisteminde hata olduğunda aktif olur.
	Motor Kapağı Açık Uyarısı	Amber	Motor kapağı açık olduğunda bilgi verir.
	EBS Turuncu İkazı	Amber	EBS' den gelen turuncu uyarı ikazıdır. EBS diagnostikten hangi hataların olduğu kontrol edilmelidir.
	Klima Açık Uyarısı	Mavi	Klima açıldığında aktif olur.
	Retarder Aktif	Amber	Ayaktan veya koldan retarder aktif olduğunda, ikaz aktif olur.
	Yolcu Duracak Butonu	Kırmızı	Yolcuların gelecek durakta inme isteğini belirtir. Arka kapı açık ise duracak butonları çalışmaz.

Tell-tale	Icon	Color	Function
1		Amber	It is active when there is a fault in the high voltage line.
2		Red	It is the red warning warning coming from the engine control unit.
3		Green	When the left signal is given, the warning is active.
4		Green	When the right signal is given, the warning is active.
5		Red	When the handbrake is active, the alert is active.
6		Blue	When the high beams are active, the warning is active.
7		Green	When the door brake (Station brake) is active, the warning is active.
8		Green	When the dipped beam headlights are active, the warning is active.
9		Amber	When the rear fog lights are active, the warning is active.
10		Green	When the front fog lights are active, the warning is active.
11		Red	It becomes active when the vehicle starts charging.
12		Red	It is a driver warning warning from the engine control unit. The faults should be checked from the engine diagnostics.
13		Red	It is the red warning warning coming from the brake module. If the warning is active, the engine should be stopped immediately and the errors should be checked from ABS diagnostics.
14		Red	The engine water temperature is a warning. If the warning is active, the engine should be stopped immediately and the errors should be checked from the engine diagnostics.
15		Amber	If the fuel level is low, the warning is active. Fuel should be filled as soon as possible.

Engine Speed Indicator



The engine rev counter measures the engine revolutions per minute. Starts when the engine is started.

Speed (km/h) Indicator



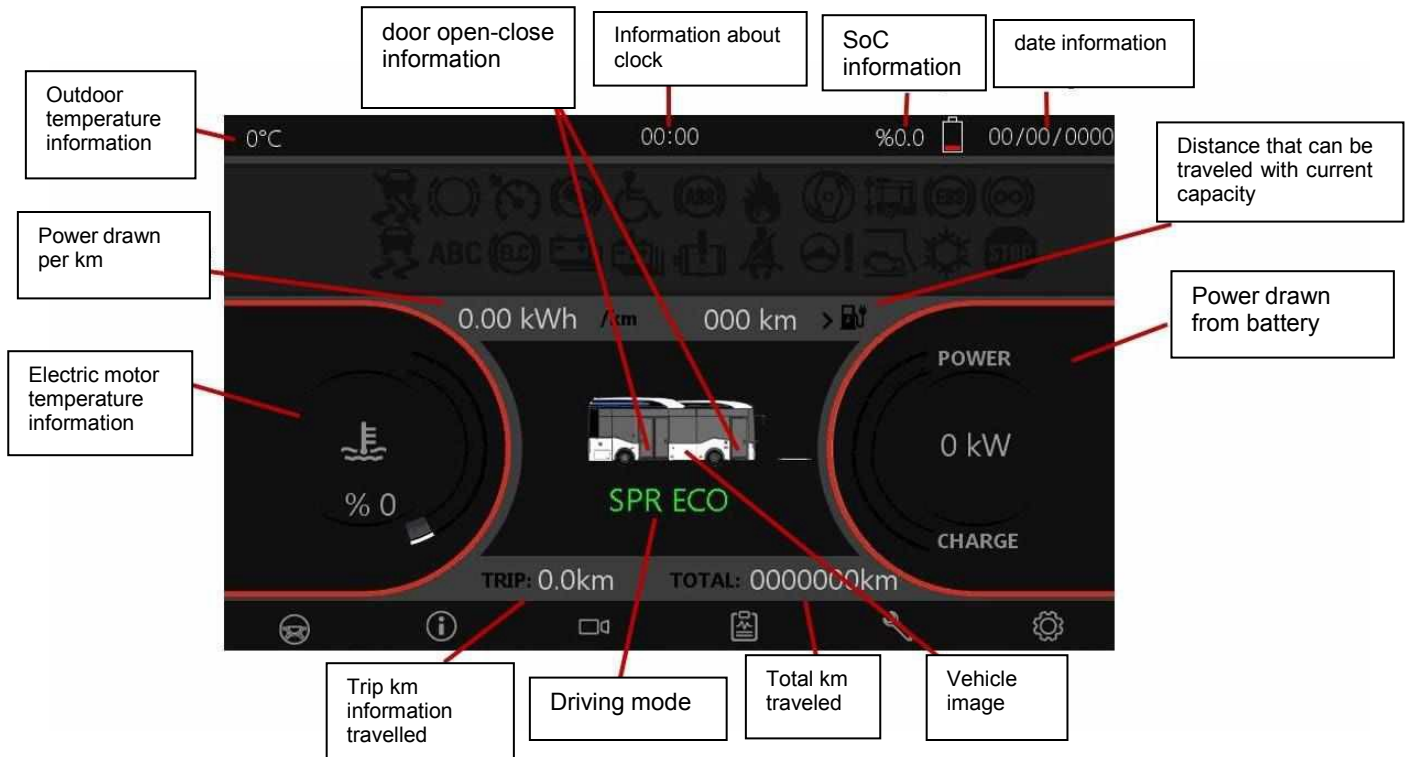
Shows the speed of the vehicle in kilometers / hour, starts to work after the vehicle moves.

Brake Pressure Gauges: It shows the value of front brake and rear brake air pressures.

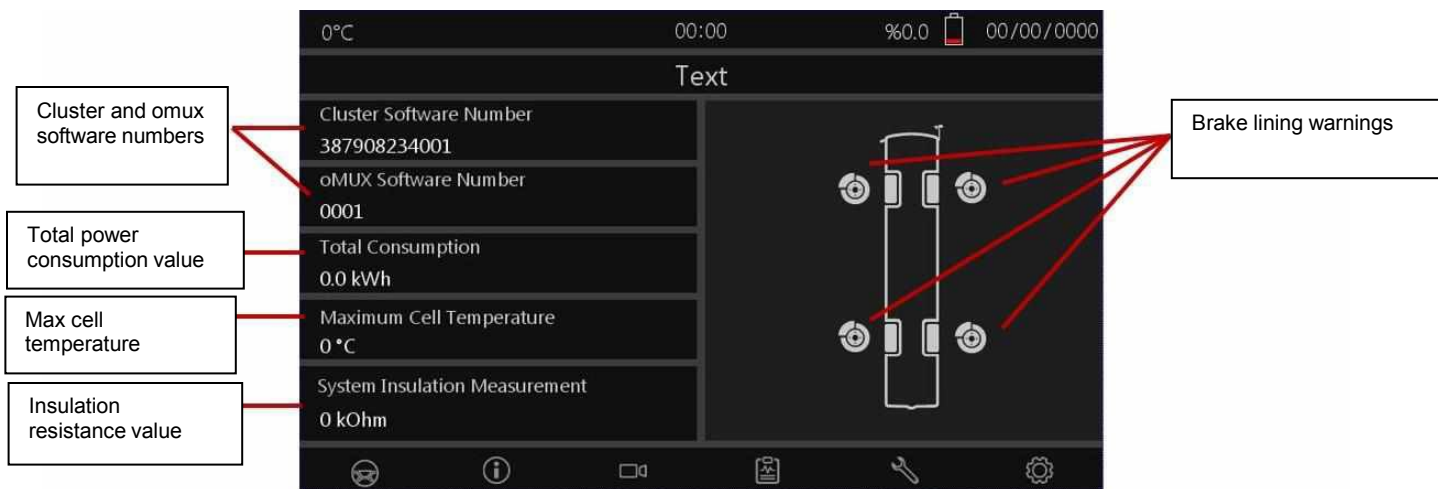


- 1- Front brake pressure indicator
- 2- Rear brake pressure indicator

Main Monitor



Information Display



Rear View Camera Screen

The backup camera screen will be on the cluster screen.

If the driver wishes, he can activate the rear view camera by pressing the button.



Timeouts Screen

0°C 00:00 %0.0 00/00/0000	
Text	
EBS Communication Ready	oMUX1 Communication Ready
Heater Communication Ready	oMUX2 Communication Ready
VMU Communication Ready	oMUX3 Communication Ready
AVAS Communication Ready	IAPU Communication Ready
DC-DC Communication Ready	Compressor Communication Ready
Cooling Water Pump Communication Ready	Steering Pump Communication Ready
Onboard Charger Communication Ready	A/C Communication Ready
	BTMS Communication Ready

If there is a problem in the canbus line with the systems specified in the vehicle, it gives a warning. (Systems that are not in the vehicle will not appear on the timeout page.)

Maintenance Screen

0°C 00:00 %0.0 00/00/0000
Text
Cluster and oMUX 1
oMUX 2 and oMUX 3
EBS
VMU
Water Cooler
DC Converter
Compressor
Steering Pump
Battery Cooler
Webasto

Cluster and oMUX 1
oMUX 2 and oMUX 3
EBS Error Codes
VMU Error Codes
Water Cooler Error Codes
DC Converter Error Codes
Compressor Error Codes
Steering Pump Error Codes
Battery Cooler Error Codes
Webasto Error Codes

Setting Screen

Time and date show manually adjusted values on all screens.

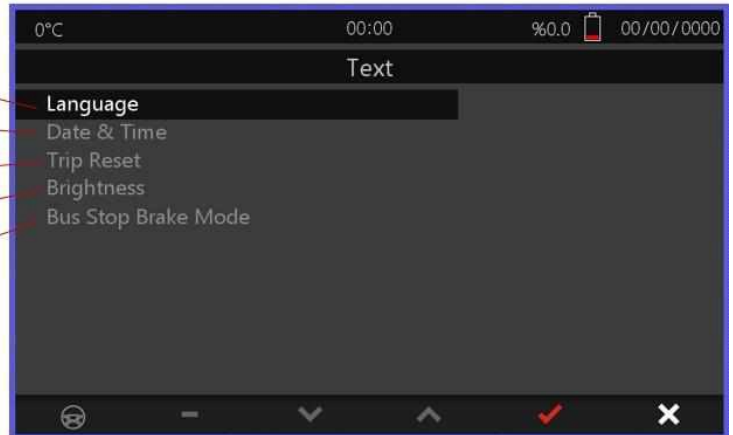
Language selection

Time/Date selection

Trip reset

Screen brightness selection

Stall brake mode selection



Language Selection (11 different languages) In order to add more languages, the infrastructure is ready in the software.

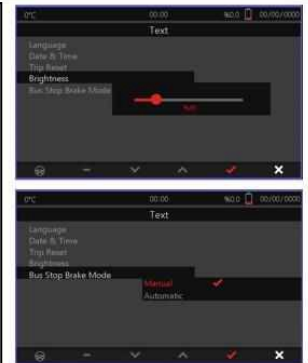
Date/Time selection

Trip reset



Screen brightness selection

Stall brake mode selection



LINE PLATE CONTROL PANEL



The line plate control panel is located in the driver's compartment upper console. The route information to be displayed on the line plate is selected/changed via the control panel.

4. VEHICLE EQUIPMENT

DRIVER SEAT



- 1- Seat Tilt Adjustment: Seat tilt can be adjusted between 2° and 12°.
- 2- Shock Absorber Adjustment: It can be adjusted in 4 steps from soft to hard with the damper adjustment button. It changes to hard position upwards and soft position downwards.
- 3- Height Adjustment: With the height adjustment button, it can be adjusted more or less steplessly with in 100 mm.
- 4- Horizontal Stretch setting: The button changes to “open” up and “locked” down.
- 5- Fast Download Setting: It provides ease of getting on and off.
- 6- Backrest Tilt Adjustment: Lean against the backrest. Pull the lever up and move the backrest to the desired position and release the lever.
- 7- Air Lumbar Pillow: It can be adjusted to the desired position steplessly.
- 8- Kidney Side Pads: The kidney pad can be adjusted according to the user's request. With the (+) button, the pillow is filled with air. With (-) the air in the pillow is discharged.
- 9- Head Adjustment: Its height and inclination can be adjusted as desired.
- 10- Forward - Backward Adjustment: It can be adjusted back and forth within 210 mm with 10 mm intervals.
- 11- Seat Depth Adjustment: It provides 5-stage adjustment within 60 mm.
- 12- 3-Point Seat Belt: Always wear your seat belts.
- 13- Armrest (Right - Left) Tilt Adjustable: By turning the adjustment button, its inclination can be adjusted steplessly. It can be easily folded up when getting on and off.
- 14- Rotating Mechanism: Provides ease of getting on and off.

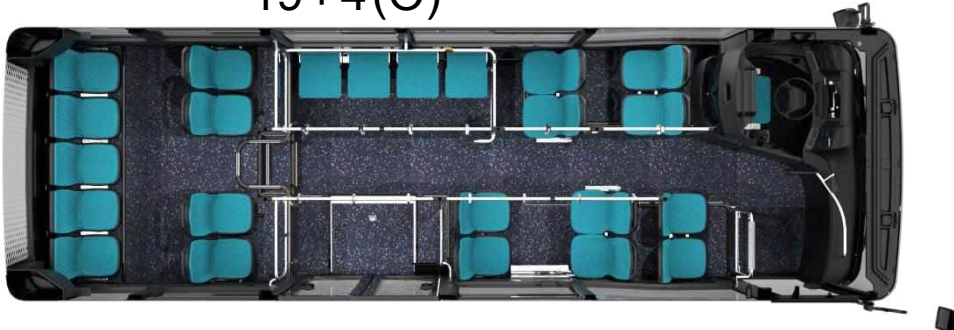
PASSENGER SEATS

In the standard of the vehicle, there are 25 passenger seats, 4 of which are folding seats. Passenger seats must be upholstered in fabric. There is a wheelchair area opposite the back door for disabled passengers.

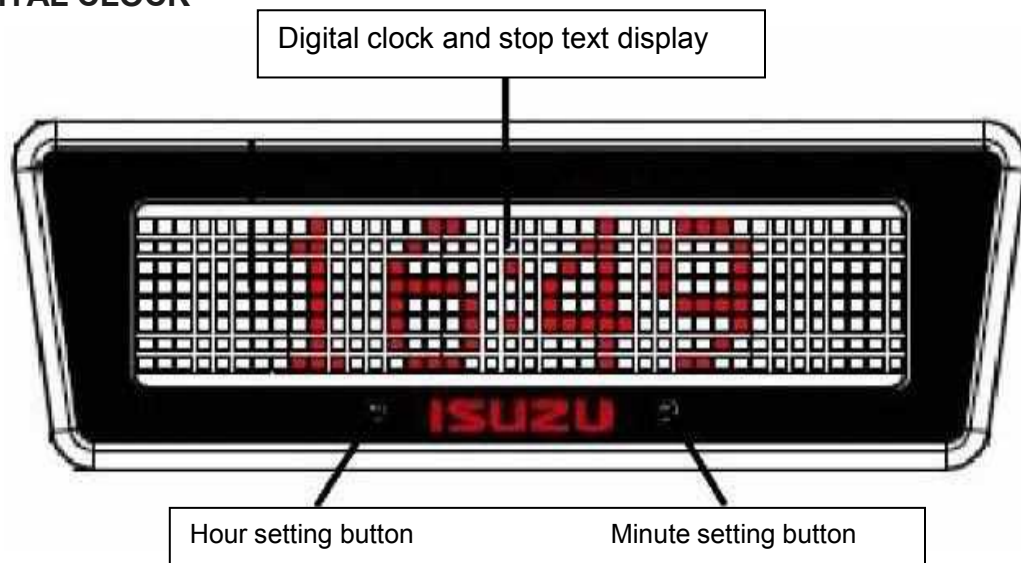
21 + 4(S)



19+4(O)

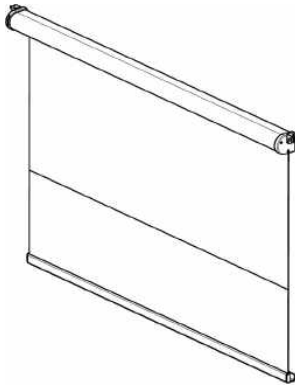


DIGITAL CLOCK



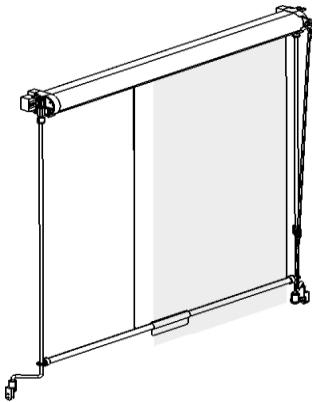
There is a digital clock at the front of the vehicle. Time and air temperature are displayed alternately on the screen. In addition, when the stop button is pressed, the text "TO STOP" is displayed. Hour adjustment can be made from the left buttons, and minute adjustments can be made from the right buttons.

WINDSCREEN BLINDS (Electric Controlled) (Option)



On the windshield, there is an electrically controlled roller blind on the driver's side. There is an electrical connection cable on the left side of the roller blind. Up and down movement of the curtain is provided with the motorized curtain button on the left side of the driver's cabin.

DRIVER'S SIDE ROLLER BLINDS (Option)



There is 1 roller blind with manual control on the left window on the driver's side. Up and down movement of the curtain is provided with 1 rope on the roller blind.

RADIO & MP3 PLAYER (Option)



There is a radio & MP3 player in the vehicle, it has USB and AUX inputs. 30 radio channels can be stored in memory. There is an external remote control in the vehicle.

HEATING AND COOLING SYSTEM



1) KEYPAD DEFINITIONS:

Rotary Switch K1



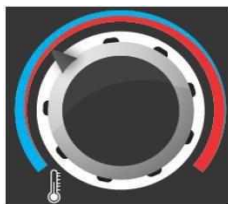
Rotary Switch	Definition of Function
Turning	When the ignition is on, the driver's side air routing is checked. The rightmost position is the defogging function for the windshield, the alternator must be running for this function.

Rotary Switch K2



Rotary Switch	Definition of Function
Turning	When the ignition comes on, the driver side fan speed is adjusted. Only min fan speed can be operated when the alternator is not running.

Rotary Switch K3





Rotary Switch	Definition of Function
Turning	When the ignition comes on, the driver's side temperature setting is made.

Button S1









Button	Definition of Function
Short Press	Driver side cooling is active. For this function to work
Long Press	---
Double Click	---
Button combination	---

Button S2

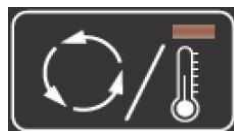
Button	Definition of Function
Short Press	The fresh damper flap on the driver's side opens and closes.
Long Press	---
Double Click	Driver and passenger close the fresh air flap for 10 minutes.
Button combination	 +  (5 sec.) Display shows driver's side temperature.

Button S3

Button	Definition of Function
Short Press	Auto mode ON/OFF.
Long Press	---
Double Click	AUTO/HEAT/COOL functions are selected.
Button combination	 +  (Ignition ON) Service mode is entered.  +  (Ignition OFF) Fault codes in the system are displayed.  +  (Ignition OFF) Clock setting is entered.



Button S4

Button	Definition of Function
Short Press	The passenger side dehumidification function is active.
Long Press	---
Double Click	---
Button combination	---

Button S5

Button	Definition of Function
Short Press	The passenger side fresh air flap opens and closes.
Long Press	---
Double Click	Clock / room temperature / outside temperature display is selected on the screen.
Button combination	---

Button S6

Button	Definition of Function
Short Press	The backup heater is activated.
Long Press	---
Double Click	---
Button combination	 +  (Ignition OFF) Preheater initial setting is entered.

Button S7

Button	Definition of Function
Short Press	Passenger side fan speed is increased (7 steps).
Long Press	---
Double Click	---
Button combination	---

Button S8

Button	Definition of Function
Short Press	Passenger side fan speed is decreased (7 steps).
Long Press	---
Double Click	---
Button combination	---

Button S9

Button	Definition of Function
Short Press	Increases the SET temperature on the passenger side to the maximum temperature value
Long Press	---
Double Click	---
Button combination	---

Button S10

Button	Definition of Function
Short Press	Decreases the passenger side SET temperature to the minimum temperature value
Long Press	---
Double Click	---
Button combination	---

AC Smart Special Functions:

The following button combinations and special functions are activated.

SMOG ACTIVATION:



When the driver fresh air button is double clicked, the driver and passenger fresh air inlets are closed for 10 minutes.

MODE FUNCTION:



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

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

DISPLAY:



Double-clicking the driver's throttle button, the display will select CLOCK / ROOM TEMPERATURE / OUTDOOR TEMPERATURE.

CHANNEL TEMPERATURE:



When the fan step down button is pressed for 5 seconds, the channel temperature is displayed on the screen.

FRONTBOX TEMPERATURE:



When the keys are pressed for 5 seconds, the frontbox temperature is displayed on the screen.

KEYLOCK:




When the keys are pressed for 10 seconds, the key lock is activated and "Loc" is displayed on the screen. Passenger side fan and temperature setting are locked with the key lock.

Air Conditioner Smart Settings:

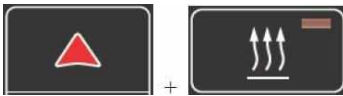
It is possible to make the following settings with the Air conditioning Smart control panel.






SETTING THE CLOCK:



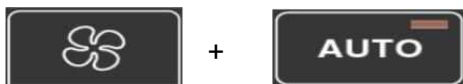
- The clock can be set with the ignition off.
- Press the keys together to enter the time setting.
-  Clock setting is made using the button.
- After the clock setting is completed, if no button is pressed for 5 seconds, it returns to the main screen.





SETTING THE PREHEATER START TIME:



- Preheater start time can be set with ignition off.
-  +  By pressing the keys together, the preheater start time setting is entered.
-  or  The preheater start time is set using the button.
-  The preheater can be started manually with the key.
- After the preheater start time is completed, if no button is pressed for 5 seconds, the main screen is returned.

DISPLAYING ERROR MESSAGES:



- Error messages can be displayed with the ignition off.
-  +  By pressing the keys together, the current error codes are displayed on the screen.
- The error message can be cleared using the key.
-  or  other error codes can be seen using the keys.
- If there is no error in the system, "---" is displayed on the screen.

Error Codes:

Sensor errors:

E01	Outdoor temperature sensor short circuit error
E02	Outdoor temperature sensor open circuit error
E03	Suction sensor short circuit error
E04	Suction sensor open circuit error
E05	Convactor front sensor short circuit error
E06	Convactor front sensor open circuit error
E07	Convactor back sensor short circuit error
E08	Convactor back sensor open circuit error
E09	Channel sensor short circuit error
E10	Channel sensor open circuit fault
E19	Icing sensor short circuit error
E20	Icing sensor open circuit fault
E25	Water temperature sensor short circuit error
E26	Water temperature sensor open circuit error
E29	Driver sensor short circuit fault
E30	Driver sensor open circuit diagram

Feedback Errors:

E40	Compressor low pressure error
E41	Compressor high pressure error
E44	Preheater error
E50	Evaporator icing warning

Valve Feedback Errors:

E65	Driver hot water valve feedback error
E68	Driver air guiding motor feedback error

Digital Output Errors:

E100	Evaporator blower step 1 output short circuit error
E101	Evaporator blower step 2 output short circuit error
E102	Evaporator blower step 3 output short circuit error
E103	Compressor output short circuit fault
E105	Condenser fan output short circuit error
E108	Water pump output short circuit error
E109	Passenger fresh air motor A output short circuit fault
E110	Passenger fresh air motor B output short circuit fault
E113	Ceiling hot water valve A output short circuit fault
E114	Ceiling hot water valve B outlet short circuit error
E117	Convactor hot water valve A output short circuit error
E118	Convactor hot water valve B output short circuit error
E121	Driver hot water valve A output short circuit fault
E122	Driver hot water valve B output short circuit fault
E123	Driver fresh air motor A output short circuit fault
E124	Driver fresh air motor B output short circuit fault
E125	Driver air guiding motor A output short circuit fault
E126	Driver air guiding motor B output short circuit fault
E134	Driver A/C solenoid output short circuit fault
E145	Underarm heater step 1 output short circuit error
E146	Underarm heater step 2 output short circuit error

Air Conditioning Parameter Settings:



- This function allows to change the basic settings of the SF70.
- This function can only be performed by a qualified person.
- When the above keys are pressed for 10 seconds, parameter settings are entered and PU appears on the screen.



and PU parameter is selected using keys.

The current value of the parameter is displayed using the key.

and Parameter value is changed using keys.

By using the key, the new value of the parameter is confirmed and the parameter is exited.

+ Pressing the keys exits the parameter menu.

- "rst" is displayed on the screen and the system performs a self-test.



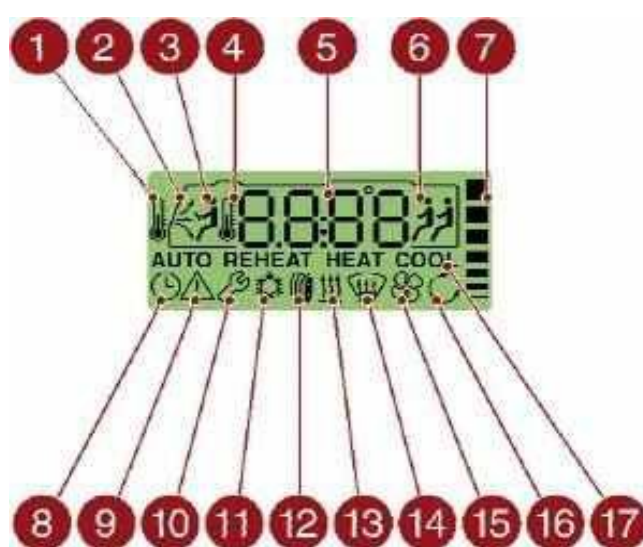
Parameters can be reset to factory settings using keys.

Parameter Table:

P.N.	PARAMETER	MIN	MAX	UNIT
PU01	Control variations coding	1	6	Value
PU02	Temperature Unit (C/F)	1	2	Value
PU03	Backlight setting	30	100	%
PU04	To be defined	-	-	-
PU05	Max dehumidification time	100	2000	sec
PU06	Outside temperature at which the dehumidification function will be inhibited	0	100	1/10 °C
PU07	Fan speed for dehumidification	50	100	%
PU08	Slowest evaporator speed	20	100	%
PU09	PWM change	0	50	%
PU10	Highest evaporator speed	50	100	%
PU11	Min. evaporator speed	50	100	%
PU12	Max. evaporator speed	50	100	%
PU13	Compressor switch-on threshold	0	20	°C
PU14	Compressor cut-off threshold	0	20	°C
PU15	Outside temperature at which compressor operation will be inhibited	5	15	°C
PU16	HP/LP compressor return	5	15	Value
PU17	Number of modules in the system	5	15	Value



Air Conditioner Led Panel:



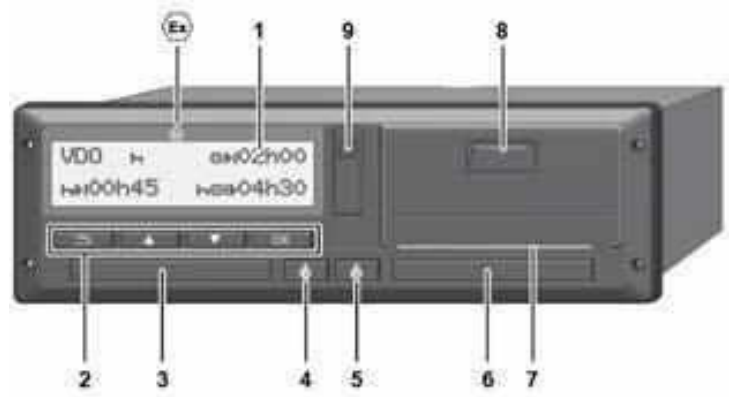
Button	Definition of Function
1	Outdoor Temperature Indicator
2	Air Distribution
3	Driver
4	Ambient temperature
5	LCD Display (Temperature, Fault Display..)
6	Traveller
7	Manual Fan Speed
8	No connection
9	No connection
10	System Failure
11	Compressor On
12	Convactor Heater Ready
13	Pre-Heater
14	Drive Defogger
15	Manual Evaporator Fan Stage
16	Transition from Fresh Air to Indoor Air
17	Function in Operation (AUTO/HEAT/COOL)

DIGITAL TACHOGRAPH (Option)

The tachograph records the speed of the vehicle, the time traveled, the distance and other information. Tachograph can assist in achieving economical driving and optimal management of operations.



No.	Name
1	Screen
2	Menu buttons
3	Card slot 1
4	Driver combination button - 1
5	Driver combination switch-2
6	Card slot 2
7	Cutting edge
8	Printer slot
9	Front interface
Ex	Label for ADR version (old version-option)





Led Screen

The contrast and brightness of the screen cannot be changed.

Menu Buttons

Please use the buttons below to enter, view or print data;

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

Düğmeye basılı tutun: Otomatik olarak kaydırın.



Press the button briefly. Confirm function / selection.



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

card slot 1

Driver 1 to drive the vehicle inserts the driver card into card slot 1.

Driver combination button - 1



Press the button briefly. Change the activity. Press and hold the button. (a least 2 seconds) Open the card slot.

Drive combination switch - 2

 Press the button briefly. Change the activity.

Press and hold the button (at least 2 seconds). Open the card drawer.

Card slot 2

Driver 2, who is not currently driving, places the driver card in drawer 2 (crew operation).

Cutting edge

You can tear the printer's paper output from the tear-off edge.

Printer slot.

Printer drawer for placing the paper roll.

Front interface

Downloading of data and parameterization is done via the front interface (workshop). The front interface is located under a cover. Access rights to the functions of this interface depend on the inserted tachograph card.

DIAGNOSTIC SOCKET



The diagnostic socket is located in the cabin in the lower right of the glove box, in the front door entrance. This socket is used for parameter uploading, changing and diagnostics to the engine control unit.

MIRRORS



There is one interior rear view mirror inside the vehicle.

Outside, there are two outside rear view mirrors, one on the right and one on the left.



Left Outside Rear View Mirror



Right Outside Rear View Mirror

IN-CAR CAMERA (OPTION).

There are 2 cameras in the vehicle that show the front door and the back door. On the left side of the driver, there is a monitor (Option) on the front panel, thanks to this monitor, the driver can follow the passenger's entrance and exit with the images reflected from the cameras.



REAR VIEW CAMERA SYSTEM (OPTION)



There is a closed circuit camera system that monitors the rear of the vehicle when parking or reversing. Images from the camera can be viewed on the LCD screen on the front control panel.

MOBILE DVR (Digital Recorder-OPTION)



The DVR is top mounted in the driver's compartment. The DVR allows recording of audio and video captured with the camera. Mobile DVR (Digital Video Recorder) provides powerful monitoring functions, including audio and video encoding and decoding, 2G, 3G and Wi-Fi wireless network transmission, satellite positioning service. Safe data storage, hard disk vibration damping. It can work both as a stand-alone recorder or collaborate with other devices to create a comprehensive surveillance system.

DIGITAL LINE PLATE

There is 1 digital line plate in the front, side and rear of the vehicle.

GRAB HANDLE

There are grab handles on the pipes for the passengers in the vehicle to hold on.



BUTTONS TO STOP

There are three types of stop buttons in the vehicle.

Standard



For disabled passengers



For priority passengers



Passengers who want to get out of the vehicle inform the driver by pressing these buttons. The relevant door Button will light up and "STOP" will be displayed on the digital clock. In addition, the audible warning is also activated. When the doors are opened, the word "STOP" and the warning lights on the door turn off.

WHEELCHAIR AREA



There is a special area opposite the rear door for the passenger in a wheelchair to travel safely.

DISABLED PASSENGER RAMP

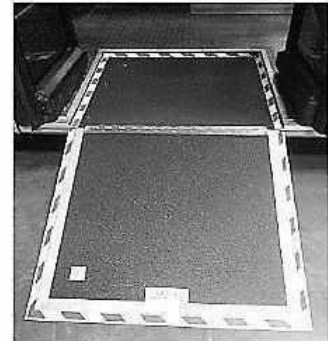
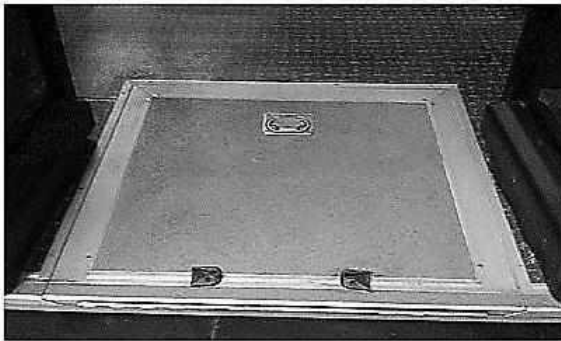
There is a manual opening/closing ramp at the rear door for comfortable vehicle entry/exit for disabled passengers in wheelchairs.

Using the Ramp


When a disabled passenger who wants to get into the vehicle

presses the  button, the  warning is given. In this situation,

Stop the vehicle at a point where traffic is convenient.

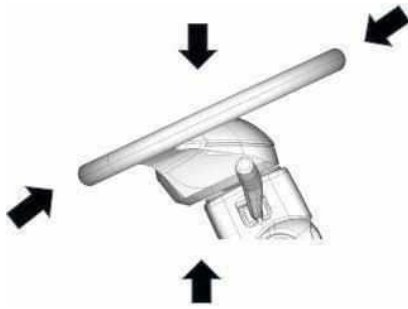


- Open the back door.
- Open the ramp by holding the handle and push it out of the vehicle.
- Have the disabled passenger get on/off.
- Close the ramp by folding it towards the inside of the vehicle.

When the ramp is open,  (back door open) warning light comes on. Disabled passenger symbol is seen on the information screen. In addition, an audible warning is heard.



STEERING ADJUSTMENT



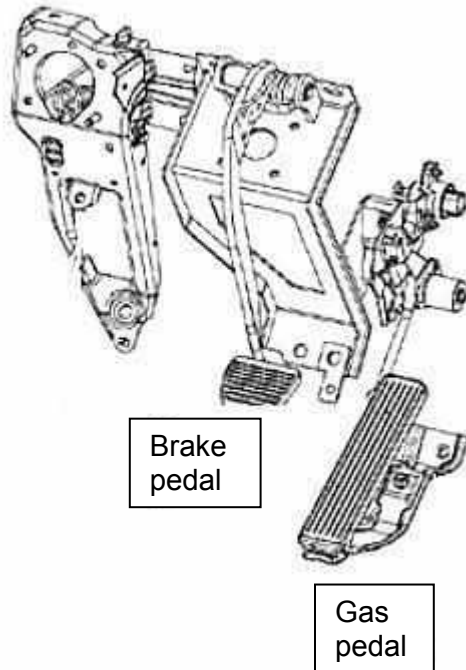
Steering is inclined and telescopic. For this adjustment, pull the lever on the left under the steering wheel towards you. When the desired position is reached, the lever is pushed back.

HORN

The horn sounds when the center of the steering wheel and the horn button on the turn signal lever are pressed.

PEDALS

In electric motor vehicle;



Brake pedal

When the brake pedal is pressed, an electrical signal is given to the respective control units and air is distributed to the brake elements. It is integrated into the vehicle's brake system and will operate when the brake pedal is pressed.

Gas Pedal

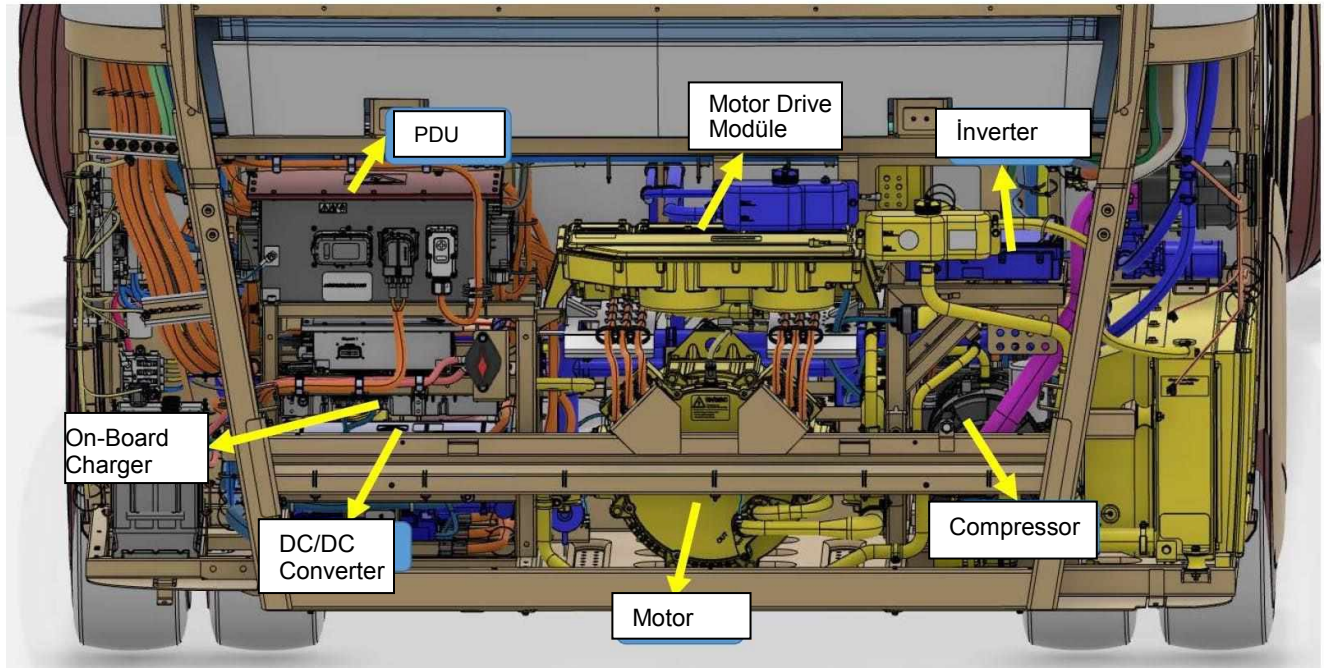
The pedal on the right is the accelerator pedal. The electronic signal sent by the position sensor connected to the accelerator pedal is evaluated by the ECU (Electronic Control Unit) and the signal going to the electric motor and the vehicle speed vary.

ELECTRICAL ELECTRONIC SYSTEM AND HIGH VOLTAGE COMPONENTS

The locations of the electronic and power group components on the vehicle are as follows. It can be easily accessed by opening the engine cover at the rear of the vehicle.

CAUTION!

Never touch the electrical electronic system and high voltage components.
No intervention should be made by authorized personnel / service.



High voltage!

Vital danger!

- **Never touch the HV cables or HV connections without first making sure that there is no voltage!**
- **The device may only be connected by a qualified electrician!**
- **Security installations should never be bypassed or bypassed! Any malfunction that occurs can lead to life-threatening consequences!**
- **Never connect the device to a socket without a protective earth conductor!**

When working on an HV system, the following 5 safety rules must be strictly followed:

- Disconnect the system from power.
- Turn off the ignition.
- Remove the service/maintenance plug and/or turn off the main battery switch.
- Remove the fuse.
- Make sure that the system cannot be reactivated.
- Keep the ignition key safe to prevent unauthorized access.
- Keep the service/maintenance plug secure to prevent unauthorized access and/or use a lockable cover to ensure that the main battery switch cannot be reactivated.
- Make sure the devices are de-energized using a suitable voltage tester (note the voltage range!).
- Ground and short-circuit the system.
- Secure or insulate adjacent moving parts.

ELECTRICAL SYSTEM (STANDARD VEHICLE)



Rated Voltage: 600 V

Battery Type: Lithium-ION - (LFP Hybrid).

Battery Capacity: 211 kWh

Range : up to 300 km (without AC) up to 200 km (wAC)

Battery Guarantee: 80% charge in 8 years with overnight charge.

ELECTRICAL SYSTEM (OPTION).

Rated Voltage: 600 V

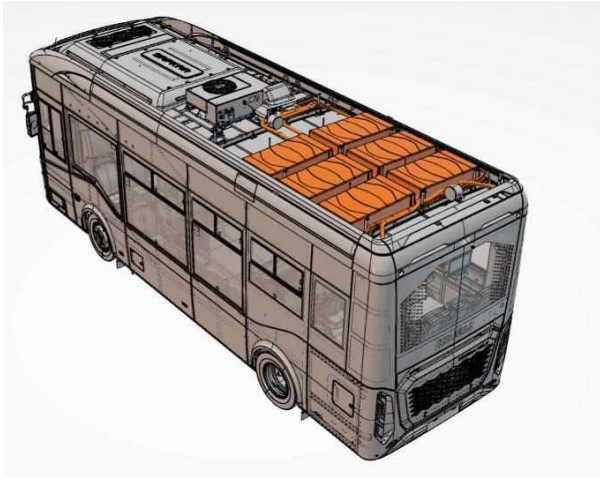
Battery Type: Lithium-ION - (LFP Hybrid).

Battery Capacity: 268 kWh

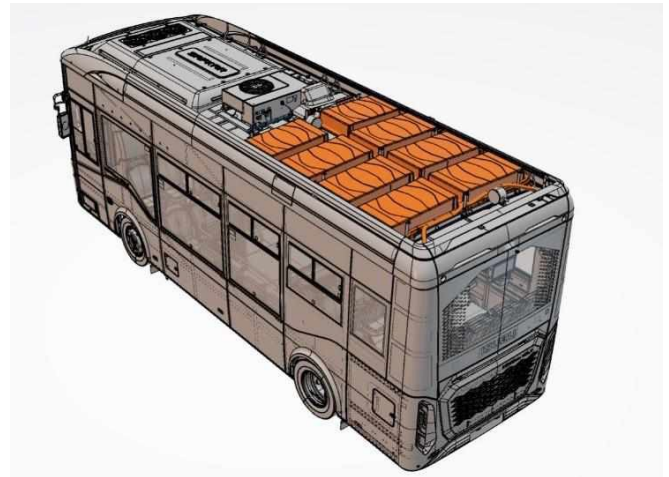
Range: Up to 380 km (without AC) Upto 250 km (w AC).



BATTERY SYSTEM



Battery Capacity: 211 kWh



Battery Capacity: 268 kWh

NovoCITI VOLT is extremely safe with its technological battery system.

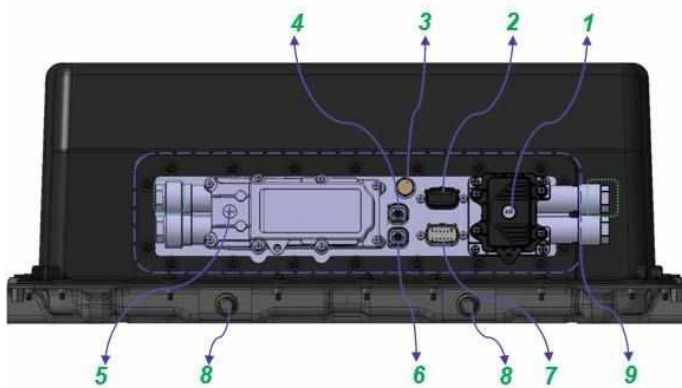
The high voltage battery unit is the energy storage device for the electric motor. The high voltage battery is charged when the electric machine is operated as an alternator. The high-voltage battery in the vehicle can also be partially charged during braking energy regeneration. However, it is mainly charged using energy from an external power grid. However, this is primarily used to maintain the state of charge when the high voltage battery is already extremely discharged. The range of the vehicle can be increased.

The high-voltage battery of an electric vehicle is equivalent to the fuel tank in an internal combustion engine vehicle. It is energy storage device for electric motor. The amount of energy to be stored in order for the vehicle to reach the desired range is accordingly high, so the volume and weight of the energy storage device are also high. However, some vehicle features were positively affected by the installation of the high-voltage battery pack in the vehicle's Drive module.

- The passenger compartment is not constrained by the high voltage battery pack.
- The high voltage battery pack is easily accessible in the Service, reducing repair costs.
- Insulated and professional tools, insulated gloves and shoes will be used for installation and maintenance.
- Please clean the tools after installation and maintenance, do not put metal objects inside or on the battery system components.
- Before connecting or disconnecting the cable, please make sure that all high and low voltage is disconnected.
- The battery system must be operated with professional tools and protective equipment.

- Maintenance should be performed by professionals with battery expertise and safety training.
- The connection between packages should be made with anti-loosening device to prevent loosening, aging and jamming.
- Avoid any short circuit during the connection process.
- All connections must be made under clear instruction, any guesswork and vague attempts are strictly prohibited.
- Important ports: Correct and reliable connection, good contact, no short circuit.
- All ports must be free of contact or short circuit with other package.
- Consult ISUZU authorized services for other uncertain factors.

Cable Connections



No.	Connector
1	BAT-
2	Low voltage input
3	balance valve
4	Heating input
5	BAT+
6	Heating output
7	low voltage output
8	cooler connector
9	Integrated panel



CAUTION!

For the High Energy type package, the power output is blocked only at one pipe, unused pipe molding stage. When installing cables, please make sure that the cable label corresponds to the individual package label.

CHARGING STATION SYSTEM AND FILLIN



Charge Type: AC Type 2 /
DC Type 2.

Charging Power: AC Plug -
22 kW DC Plug - 150 kW.

Standard tool

Option

Charging Time: 150 kW – up to 2 hours |
22 kW – up to 8.5 hours |

up to 2.5 hours
up to 11 hours

NOTE:

Both AC (Slow) and DC (Fast) charging can be done through a single socket. It provides a 10-minute fast charge, up to 30 km without damaging the battery life. Intelligent energy management provides remote control for charging.

CLUSTER CHARGE END WARNING

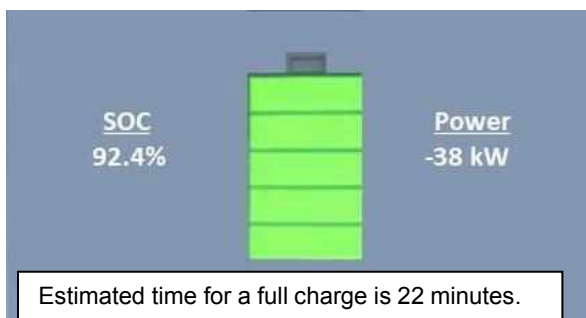


When the charge level drops to 10% and below, the Red warning appears on the side. In such a case, charge your vehicle at the nearest charging station.

CHARGING TIME



Users can follow the estimated time remaining on the digital display screen during the charging period.



USING CABLES AND SOCKETS FOR CHARGING



During the charging process, the CCS type 2 DC charging cables are locked in place electromechanically via a locking actuator integrated into the vehicle charging port. The charging cables comply with the IEC 62196-3 standard and are VDE certified. The charging cable you will use to charge your vehicle must comply with IEC 62196-3 and DIN EN 50620 standards.

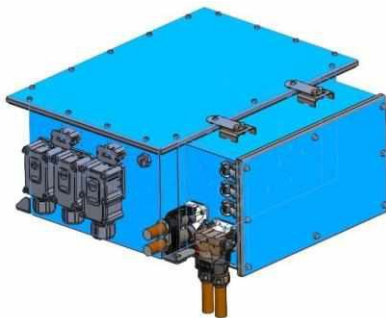
DRIVER SCORING SYSTEM



The driver will be rated based on his fuel consumption performance.

- **1X Green:** Good
- **2X Green:** Very Good
- **1X Yellow:** Moderately good
- **2X Yellow:** Should be better
- **1X Red:** Bad
- **2X Red:** Awfull

PDU (POWER DISTRIBUTION UNIT)

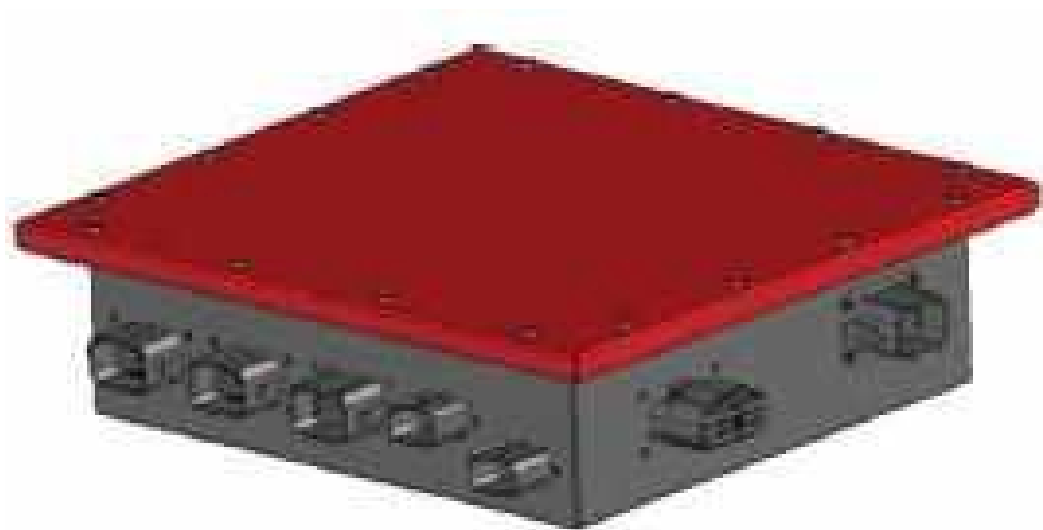


PDU is a high voltage distribution unit for EV, hybrid power, commercial vehicle, low speed vehicles for current distribution and control of battery, electric motor, Fast charge, slow charge, air conditioner, heater, DC/DC converter, and more equipment.

Electrical properties	
Voltage measurement	850 V DC
Rated current	500A
Test voltage	2700 V / 60 sec.

Environmental features	
Temperature range	-40 to +90 °C (3000 h)
Protection mode	IP 67

FAST CHARGING CONTROL UNIT (VCCU)



It is the unit that not only controls the high speed charge in the vehicle but also manages the batteries.

Electrical properties	
voltage measurement	20-28 V DC
Rated current	20 A
Test voltage	1000 V / 60 sec.

Environmental features	
Temperature range	-40 to +90 °C (3000 h)
Protection mode	IP 67

BUILT-IN CHARGER (OBC).



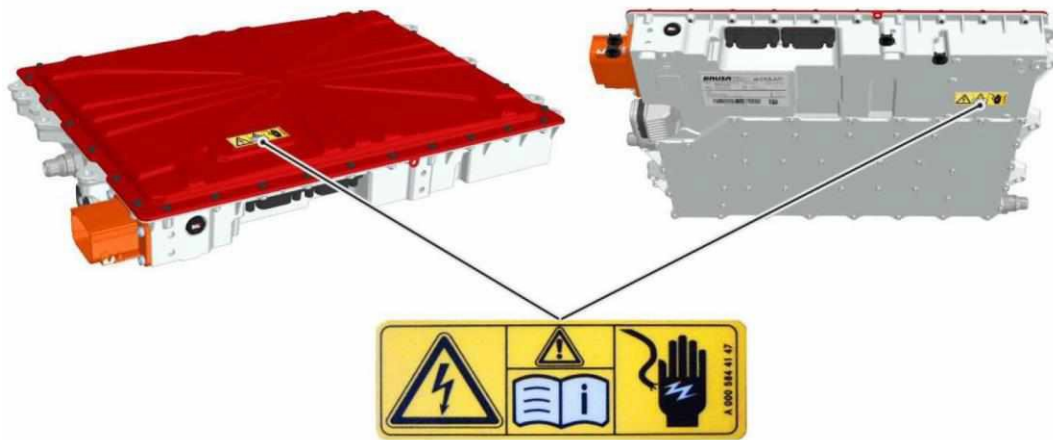
It is the on-board charging unit that allows the vehicle to be charged with AC (3 phase) voltage.

Below is a brief overview of the NLG6 charger's performance and versatility. As you read this guide, you will find details about individual properties.

- Manufactured and tested according to European automotive standards.
- This VDE certified charger complies with all applicable European legal requirements. EMC compliance must be achieved with the vehicle.
- The galvanic isolation between the mains and the battery circuit guarantees optimum personnel protection.
- Touch and leakage current values remain within the required limits without any other precautions.
- The charger can be used in conjunction with a standard type A RCD.
- The power factor $\cos(\phi)$ is approximately ≈ 1 , so the available mains power is used to the maximum.
- The charging current contains a very low fluctuation.
- Charging from a single or three-phase outlet.
- It is possible to connect several chargers in parallel to achieve higher charging power.
- High efficiency (typically $>94\%$).
- It is resistant to protect against dust, moisture, vibration, etc.

Alerts on the Device

Warning signs are placed on the device to warn the user against possible dangers. If one of these warning signs is lost or illegible due to wear and tear, it must be replaced immediately.

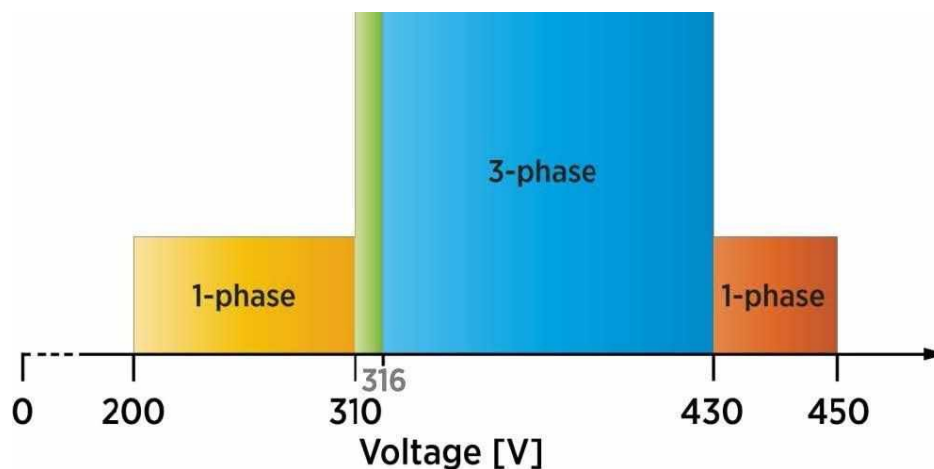


Basic Function

The NLG6 converts 1- or 3-phase alternating current to direct current and provides galvanic isolation between the public AC grid and the electric vehicle's HVDC system. This ensures, on the one hand, that the battery is charged, and on the other, the safety of both networks.

Battery charge is controlled by CAN, i.e. NLG6 limits current and voltage to values received by CAN. If such signals are not received for a certain time (approximately 0.5 sec), the unit will cut off charging to protect the battery. The NLG6 includes an interface for IEC-61851 / SAE-J1772 signals, i.e. related safety signals and protocols such as Control Pilot and Proximity are presented according to standards. In addition, there are protection measures (temperature detection and derating, fuses) integrated into the unit to protect the unit from overload and cut off the power flow in case of potentially dangerous situations and fault patterns.

Voltage dependent control of 1-phase and 3-phase charging



NLG6 provides 3-phase charging for battery voltage ≥ 310 V to ≤ 430 V at maximum. 22kW. Outside this range, single-phase charging max. 7kW. A delay is programmed for this transition threshold, which defines the following transition point.

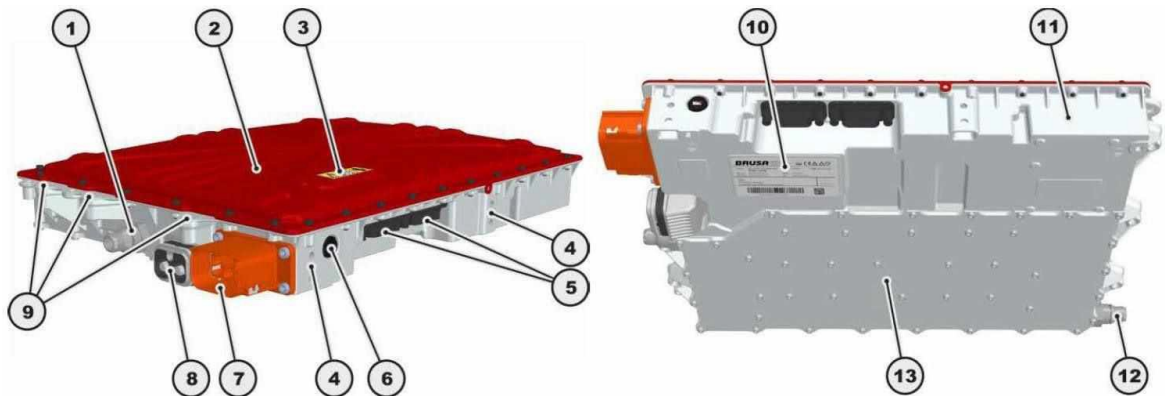
If the battery voltage is < 310 V when switching on the charger, 1-phase charging is automatically activated. Then, if the battery voltage reaches ≥ 316 V (delay dependent transition threshold), the charger automatically switches to 3-phase charging. If the battery voltage is ≥ 310 V when switching on the charger, 3-phase charging is automatically activated.

Charging Modes (Mode 2 and Mode 3 charging)

Mode 2: Alternating current (AC) charging at a local standard outlet or CEE outlet using an In-Cable Control Box (ICCB) integrated into the charging cable. ICCB provides an accurate charging procedure controlled by safety signals and equipment according to relevant standards.

Mode 3: Alternating current (AC) charging from a dedicated EV charger is provided either via a socket (usually type 1 or type 2) or via a fixed mode 3 charging cable attached to the installation. Safety signals and equipment are provided by the corresponding mode 3 charger.

Overview of Major Structural Components



- 1. Coolant inlet connection
- 2. Body cover
- 3. HV warning label
- 4. Holes for attachment clips
- 5. LV plug
- 6. Pressure compensating membrane
- 7. Power plug
- 8. DC plug (code A)
- 9. Device mounting / Screw point
- 10. Type plate
- 11. Enclosure
- 12. Coolant outlet connection
- 13. Cooling circuit cover.

DC/DC CONVERTER

It is the unit that converts high voltage (600V) to low voltage (24V) for the supply of 24 Volt batteries in the vehicle. DC/Dc charges the energy from the vehicle's HV battery pack by sending it to the vehicle's 24V battery pack. The DC/Dc will be controlled by the VMU by following the energy capacity of the vehicle's 24V battery pack.



CHARGING SOCKET (CCS2) ON VEHICLE

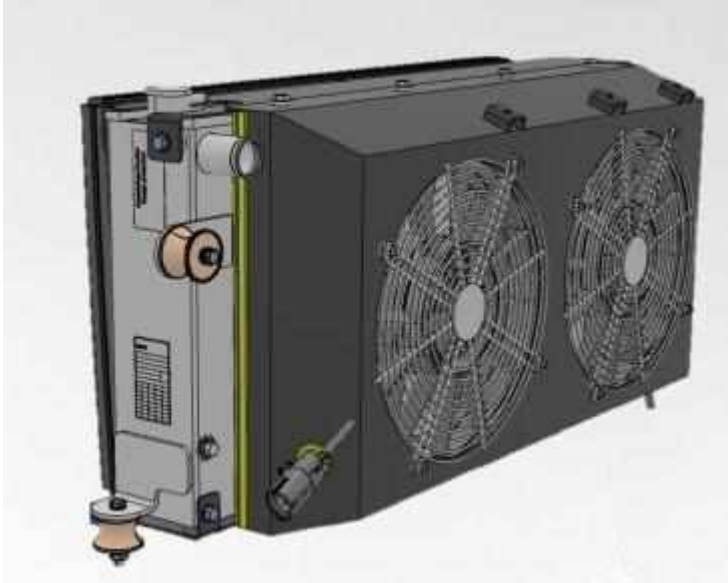


Input that allows the vehicle to be charged with DC and AC power.

Vehicle Input for charging with alternating current (AC) and direct current (DC), for installation in electric vehicles (EV), CCS type 2, Combined Charging System, IEC 62196-3, 200 A / 1000 V (DC), 32 A / 1000 V (AC), 24 V Charging socket with locking actuator.

ELECTRIC RADIATOR

Radiator and radiator fans, motor on the vehicle, motor driver, Dc to Dc, On board charger etc. It is used for the cooling of liquid-cooled equipment.



HIGH VOLTAGE HEATERS (HV HEATER)

They are high voltage heaters that feed the heating system that heats the interior of the vehicle and there are 2 on the standard vehicle.

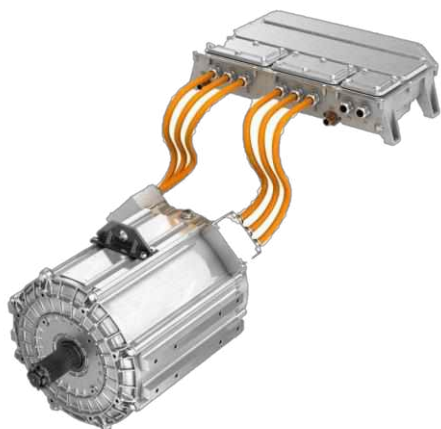


The HVH100 – High Voltage Heater – is an electrically operated heater integrated in the coolant circuit and directly heats the coolant. Depending on the circuit diagram, the HVH heat output will be used to heat the cabin and/or engine.

The HVH is powered by the vehicle's high voltage battery. It can be driven with voltages between 250 – 870 V DC. HVH from 870 V to 450 V, max. 10 kW heat output. Below 250 V, the HVH detects that the HV voltage is too low and stops working. Voltages greater than 895 V will cause the HVH to shut down and be temporarily locked.

Direct heat output: the tool delivers a clear target heat output value (within the specified range)

ELECTRIC MOTOR



Drive Type	Battery Electric Vehicle
Type	Electric Traction Motor
Model	TM4 HV2200
Max Power	255 kW
Max Torque	2355 Nm

TM4 LSMxxxC motor technology uses permanent magnets to deliver high efficiency. The motor topology is based on an inverted rotor technology that maximizes the use of magnets and reduces the amount of material. The system's high torque/low speed is designed to interface directly with standard axle differentials without the need for a transfer case.

The TM4 CO200 (6-phase) and CO150 (3-phase) MCU use the latest in automotive-grade insulated-gate bipolar transistors (IGBT) to provide the industry's highest specific power and current densities.

Safety instructions

This motor must be installed and operated by qualified personnel who are fully aware of the types of hazards involved in working with electrical circuits and are familiar with standard practices for preventing accidents.



General/Irritant/Operational: This warning symbol indicates that you are in a potentially hazardous situation which could result in damage to the product or in some cases, bodily harm or death.



Electrical: This warning symbol indicates that you are in a potentially hazardous situation which is electrical in nature and which could result in the product or, in some cases, bodily harm or death.

To remind you of the potential hazards involved, this manual and procedures contain appropriate safety warnings that, if done incorrectly, could cause harm to you or the product.

ENGINE CONTROL UNIT (MCU)



The electric motor system is operated via the CAN message exchange between the Motor Control Unit (MCU) and the Vehicle Management Unit (VMU). The VMU is responsible for the user interface and also interfaces with the Battery Management System (BMS) / Power Distribution Unit (PDU) and all other components involved in the vehicle architecture.

Typical VMU and BMS/PDU operations involved in the engine system include:

- Powering the system from the auxiliary battery.
- Acknowledgment of the activation signal (VMU or vehicle ignition).
- Performing high voltage battery precharge (BMS/PDU).
- Applying high voltage battery voltage to the system (BMS/PDU).
- Transmission of CAN messages (VMU) with the MCU:
 - Starting and stopping the system.
 - Application of a mechanical torque.
 - Safe shutdown of the system.
 - Verification of operational status.

Safety warnings on operating the system



Read these general safety warnings before operating the system.

Improper use of the motor control unit can damage the product and/or cause injury or death.

- Do not attempt to open or repair the MCU. Contact ISUZU in case of damaged chassis or suspected product malfunction.
- Use only recommended points for lifting and securing the system.

When disassembling and/or installing the MCU, you MUST NOT:

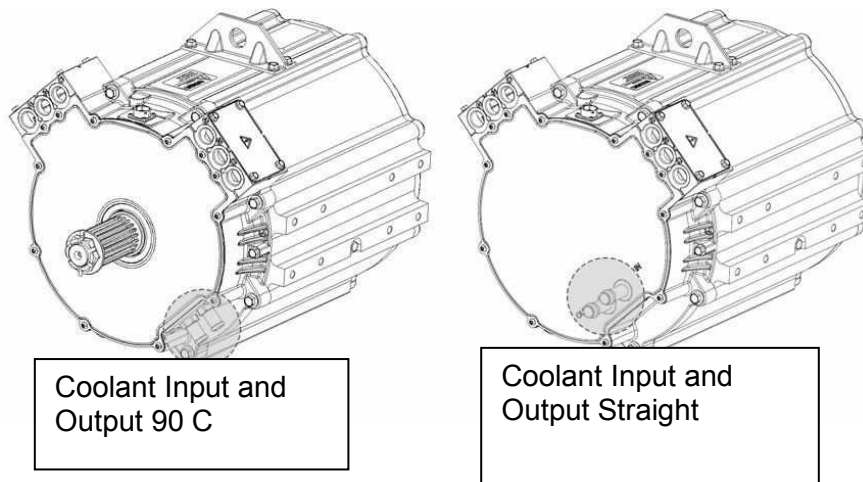
- Do not modify any part of the MCU.
- Do not apply any external load to the case of the MCU.

- Applying excessive torque or speed when the engine is cold can adversely affect component durability.
- When the engine is used in an environment where the ambient temperature is below 0 °C, it is recommended to avoid excessive speed or torque and to follow a normal driving cycle for the first few minutes until the engine has had a chance to warm up.
- Note: This is a widely applicable best practice for any mechanical equipment. The TM4 engine does not limit performance, full speed and torque is available after a cold start, but is not recommended. The engine can reach very high temperatures that can cause severe burns and/or other injury.
- Avoid contact with surfaces during and immediately after use.

WARNING!

- Misuse of this product can damage the vehicle and/or cause injury or death.
- All limitations and specifications communicated by TM4 regarding the product must be followed.
- Do not attempt to open, repair or modify the MCU. In case of damaged case or questionable product malfunction, contact TM4 Customer Service.
- If you use chains, straps, or other means of lifting, make sure they do not touch or exert pressure on any part of the exterior of the product (surface, connectors and/or cables).

Coolant Input/Output Features



Electric Motor Cooling

TM4 system cooling management algorithms are based on complex thermal modeling that optimizes system performance while maintaining system integrity and durability.

The cooling requirements of the engine and MCU are met by CAN signals. Working with the maximum coolant flow set for each component, these signals provide the information needed to maintain the required coolant flow and require no driver input or interaction.

The VMU relies on cooling demand messages to start/stop or modulate the cooling system pump(s) and fan(s), modulation is dependent on operating conditions as described in the table below.

System coolant flow management rate and operating conditions:

Working conditions	Coolant flow rate management
Torque > 0 Nm	50%
Speed > 500 RPM	50%
Thermal protection	up to 100%

Note: For operating conditions where torque is 0 Nm and speed < 500 RPM, coolant flow rate management can be 0%.

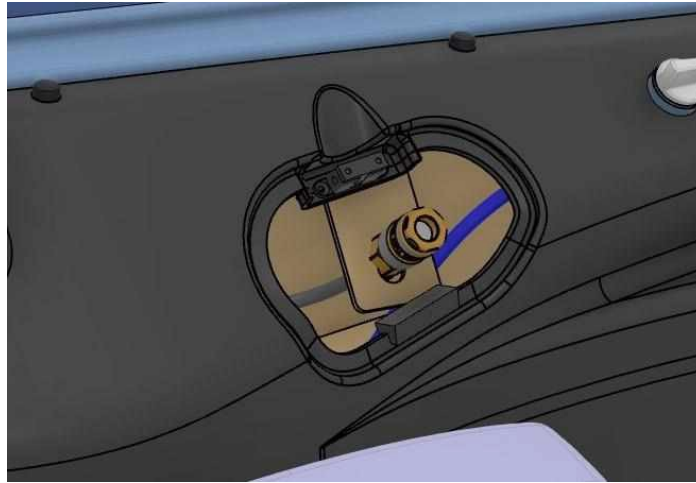
BATTERIES



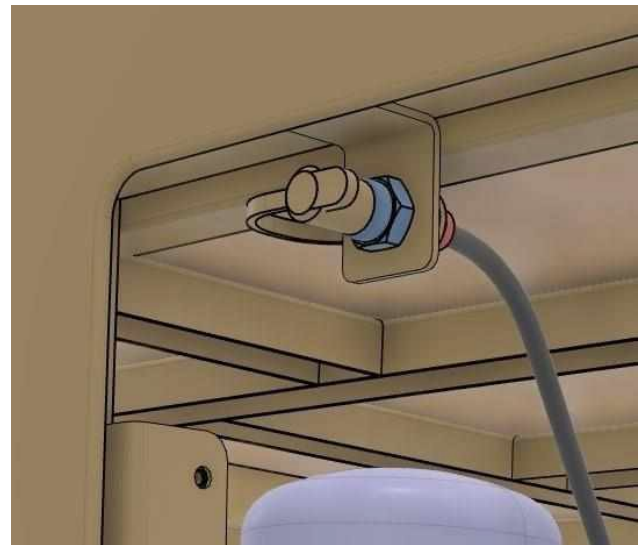
The batteries are located in the left rear part of the vehicle. There are 2 batteries in the vehicle. Each battery is 12V and 105 Ah.

TIRE INFLATOR SET

The tire inflation port is located in the side control console, to the left of the driver. The port is accessed by manually removing the cover.



The vehicle air supply port is accessed through the maintenance cover located behind the left front wheel of the vehicle.



- If the air pressure in the vehicle tires is low, the tire inflation kit between the tool is used to adjust the tire pressure. To do this:
- Park the vehicle in such a way that it does not obstruct the traffic.
- Set the parking brake, shift the gear to neutral and start the engine. Get the tire inflation kit.
- Connect one end of the hose to the tire valve and the other end to the air outlet. Complete the inflation process by giving gas to the engine.

ELECTRONIC BRAKE SYSTEM (EBS)

EBS (Electronic Brake System) is a system that adds electronic signals to the brake air control system (sent when the brake pedal is pressed) to improve air brake response. EBS maintains the same brake feel regardless of whether the vehicle is loaded and is a device that increases driver operability and safety.

- EBS is not a device to counter unsafe driving practices. Always maintain a safe speed and a safe distance between yourself and other vehicles.
- All tires fitted to the vehicle must be of the specified size, make and tread design (this includes winter tires). Fitting different types of tires on the vehicle is dangerous and may result in reduced braking ability and unstable operation of the vehicle.

EBS Operation Check, Operation, Fault



When the starter switch is turned to the "ON" position, the brake warning lamp comes on before it goes off after about 3 seconds. If the warning light goes out, the EBS is normal. If the warning light does not come on even when the ignition switch is turned to the "ON" position, the bulb may be burnt out or there may be an EBS malfunction.

While the EBS is running, operating noises can be heard from the EBS components. If the brake warning light illuminates or flashes while driving, the EBS, ABS/ASR may be faulty. Please contact your nearest Isuzu Dealer.

NOTE: Even if the EBS is faulty, normal brakes will continue to operate normally. Since the EBS will be inoperable at this time, the brake pedal will have to be pressed harder than usual to obtain the required braking force.

Driving Precautions for EBS Equipped Vehicles

EBS is not versatile enough to allow driving in conditions that exceed safe limits. Always drive safely.

WARNING!

If the starter switch is turned to the "ON" position (start the engine) on a hill, etc., the EBS may be affected by a drop in battery voltage, causing the vehicle to roll downhill. After pulling the parking brake lever or fully depressing the brake pedal, turn the starter switch to the "ON" position (engine start).

CAUTION!

- Although models with EBS have improved braking response compared to models without EBS, EBS is not a device to prevent unsafe driving practices. Always drive at a safe speed.
- On models with EBS, the EBS is activated when the brake pedal is depressed, regardless of whether the starter switch is set 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 from the EBS system cannot be heard when the brake pedal is depressed and released, the EBS exhaust port may be frozen or blocked by snow or ice that needs to be removed.
- EBS operation may be affected if battery voltage drops. Periodically inspect the battery.
- On models equipped with EBS, the on-board computer detects the loading conditions, making it unnecessary for drivers to adjust how they depress the brake pedal, regardless of whether the vehicle is loaded or unloaded. However, as with vehicles without an EBS system, the braking distance will increase if the brake pedal is not sufficiently depressed when the vehicle is empty.
- If the driver depresses the brake pedal instead of fully depressing the brake pedal, the EBS will not operate at its full capacity. Pumping the brakes will also result in a decrease in brake performance due to the increase in air. ("Pumping the brakes" is defined as the continuous pressing of the brakes at a rate of one or more times per second.)

RECOMMENDATION

- When installing an electronic device such as a radio, pay attention to the installation location and orientation so that the EBS function is not affected. Also, please contact the nearest Isuzu Dealer during installation.

How to Make EBS Work Correctly?

EBS calculates the loading conditions and determines braking power using the amount of brake pedal stroke along with the vehicle deceleration rate. If the loading conditions change, the EBS recalculates the weight. This recalculation will only be completed after the vehicle has been completely stopped at 30 km/h (19 MPH) or more, a total of 3 to 4 times without pumping the brakes.

CAUTION!

- Lighting of the brake warning light indicates that an EBS fault has occurred. In this case, normal brakes will still work normally, although the feel of the brakes will change significantly due to the operation of the EBS. If the EBS fails, press the brake pedal firmly, stop the vehicle and contact your nearest Isuzu Dealer.

ELECTRONIC STABILITY CONTROL (ESC)

ESC improves safety and vehicle stability. ESC controls the engine power and applies the braking force to the wheels that need it, to prevent wheel spin during starting and accelerating on slippery roads, to protect the traction power, to prevent the vehicle from sliding sideways and to improve vehicle stability.

The ESC has various sensors that detect changes in the vehicle's operating conditions while cruising. The anti-slip regulator (ASR) prevents wheel spin when starting or accelerating. ASR is integrated into ESC. ESC is activated automatically when the vehicle is started. On models with EBS, the ESC OFF switch can be used to disable ESC and ASR. For models without EBS, the ESC OFF switch (if equipped) can be used to disable ESC or ASR only.

CAUTION

- The ESC warning lamp flashes when ESC works.
- The ESC warning lamp also flashes only when the ASR function is working.
- If the ESC warning lamp is flashing, the road surface is slippery or the acceleration is too fast. Depress the accelerator with less force and drive cautiously.
- The ESC warning light may also flash when the accelerator pedal is fully depressed on non-slippery roads such as dry asphalt roads. This is a normal condition that anticipates slipping and implements the command action.
- When driving on snowy or icy roads, wear snow chains or winter tires and drive carefully, even if the vehicle is equipped with ESC. ESC is not equipment that greatly improves vehicle stability when starting or driving, so drive carefully on snowy or icy roads.
- When snow chains are fitted, it may be easier to start the vehicle on an icy or sloping road when only the ASR is disabled. However, be careful as disabling the ASR will cause the vehicle to lose stability.
- Install tires of the specified size, same make, same type and same tread design (including winter tires) on all wheels. Also, do not install or use tires with widely varying degrees of wear. The ESC may not function properly if tires of a different size, type, or degree of wear than specified are used.
- The ESC may not work properly if the tire diameter is different, such as when a chain or spare wheel is fitted.
- ESC may not work properly if suspension, brake or engine related parts are replaced or modified with non-Isuzu genuine parts.
- Be sure to contact your Isuzu dealer for replacement or repair of the steering wheel or steering-related parts. The steering wheel has a sensor that detects driving conditions, and the ESC may not function properly if the steering wheel center position misalignment.
- Do not tow a vehicle with only the front or rear wheels raised with the ignition switch in the "ON" position. ESC may work and cause crash.

NOTE:

[The following situations do not indicate that the ESC is faulty.]

- An electric motor noise may be heard from the engine compartment immediately after starting the engine. Buses originate from the self-control process implemented by the ESC. You may also feel a slight vibration if the brake pedal is depressed during this time.
- Vibration or tightness may be felt in the brake pedal movement while the ESC is operating. In addition, the vehicle body may vibrate or the operating sounds of the system may be heard. This is normal when ESC is running.
- After the vehicle has started, the ESC will not work until it reaches a speed of approximately 15 km/h (9 mph).

ESC OFF Switch

When you try to free the vehicle from mud or soft snow with the ESC and ASR operating, the engine power may not increase even though the accelerator pedal is pressed, and it may be difficult to free the vehicle. In such cases, using the ESC OFF switch makes it easier to recover the vehicle. ESC can be disabled using the ESC OFF switch, or only the ASR function of the ESC system (the anti-skid function during take-off or acceleration) can be disabled.

ASR OFF Indicator Lamp



ESC OFF warning lamp

**Cancellation of ASR**

When ESC is active after the vehicle is started, press and hold the ESC OFF switch for about 1 second to cancel the ASR function, the ASR OFF indicator lamp on the instrument panel will turn on. Pressing the key again for approx. 1 second reactivates the ASR function.

CAUTION

- When you turn ASR off, its function that assists you when driving on slippery surfaces is now deactivated. Always be careful when driving on slippery roads.
- Always operate the ASR during normal driving.
- Even when ASR is off, partial brake control is active. ESC warning lamp illuminates when operating in fog.

NOTE

- Automatically reactivates when the engine is stopped and restarted while ASR is deactivated.

ESC OFF
indicator lamp



Cancellation of ESC

When ESC is active after the vehicle is started, press and hold the ESC OFF switch for about 5 seconds to cancel the ESC function, the ESC OFF indicator lamp on the instrument panel will turn on. The ESC function is reactivated when the key is pressed again for approximately 1 second.

CAUTION

- When you turn off the ESC, its function that assists you when driving on slippery surfaces is now disabled. Always be careful when driving on slippery roads.
- Always operate the ESC while driving under normal conditions.
- Be careful when driving on slippery roads, as ASR is turned off when ESC is turned off.

NOTE:

When the engine is stopped and restarted while ESC is disabled, ECS is automatically reactivated.

ESC Operation Control and Operation and Fault Conditions of ESC

ESC warning lamp



ASR OFF indicator lamp

ASR
OFF

ESC OFF indicator lamp

ESC OFF indicator lamp



ESC Operation Control

On models equipped with the ESC OFF switch, when the ignition switch is turned to the "ON" position, the ESC warning lamp, ASR OFF indicator lamp (models without EBS), and ESC OFF indicator lamp come on for about 3 seconds and then turn off.

For models without the ESCOFF switch, the ESC warning lamp illuminates for 3 seconds and then turns off. If the warning and indicator lights go out, the ESC is normal.

ESC Working

ESC warning lamp flashes while ESC is running.

ESC Faulty

- The following states of the ESC warning lamp mean that the ESC may be faulty. Please contact the nearest Isuzu authorized service.
- ESC warning lamp comes on while driving.
- On models equipped with the ESC OFF switch, the ASR OFF indicator lamp (models without EBS) and the ESC OFF indicator lamp come on while driving (even if the ESC OFF switch is not pressed).
- On models equipped with the ESC OFF switch, the ESC warning lamp, ASR (ESP/ESC) OFF indicator lamp (models without EBS) and ESC OFF indicator lamp do not come on when the ignition switch is turned to the "ON" position.
- On models without ESC OFF switch, the ESC warning lamp does not come on when the ignition switch is turned to the "ON" position.

Driving Warnings for Vehicles with ESC

CAUTION

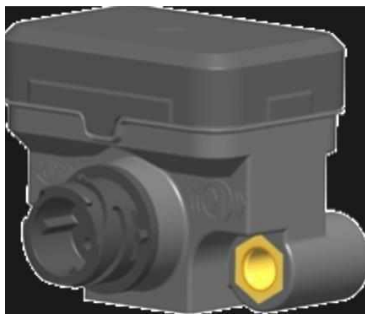
- The ESC is not a device that ensures that the vehicle can be used under conditions that exceed the limits of safe use. Always drive carefully.
- Always focus on safe driving and rely on the ESC-equipped vehicle with vigilance, don't drive too fast and don't turn the steering wheel too fast.
- ESC does not increase the grip of the tires, but unlike vehicles without ESC, it keeps the vehicle's slipping and skidding movements under control during take-off and acceleration on slippery surfaces and improves vehicle stability. On roads that become slippery due to icing, etc., tires fall out of grip, steering control weakens and the vehicle becomes unstable. Always drive at a safe speed perfectly suited to road surface conditions and the condition of the tyres, and avoid accelerating.
- ESC is a system for maintaining traction and vehicle stability. Operate this system even when not needed. When the system is turned off, drive the vehicle with caution and at a safe speed perfectly suited to road surface conditions.
- Even if the vehicle is ESC equipped, avoid depressing the accelerator and clutch (manual transmission models) pedals rapidly and avoid sudden steering movements. Especially when starting off on slippery roads, start the vehicle slowly, as in vehicles without ESC.
- The ESC warning lamp flashes when ESC works.
- The ESC warning lamp also flashes only when the ASR function is working.
- If the ESC warning light is flashing, the road surface is slippery or the acceleration is too fast. Depress the accelerator pedal with less force and drive cautiously.
- The ESC warning lamp may also flash when the accelerator pedal is fully depressed on non-slippery roads such as dry asphalt roads. This is a normal condition that anticipates slipping and implements the command action.
- When driving on snowy or icy roads, wear snow chains or winter tires and drive carefully, even if the vehicle is equipped with ESC.
- When snow chains are fitted, it may be easier to start the vehicle on an icy or sloping road when only the ASR is cancelled. However, be careful as disabling the ASR will cause the vehicle to lose stability.
- Do not install an ordinary commercially available limited slip differential (LSD) on the vehicle. ESC may not work properly

NOTE

- Vibration or tightness may be felt in the brake pedal movement while the ESC is operating. In addition, the vehicle body may vibrate or the operating sounds of the system may be heard. This is normal when ESC is running.
- Suspension, tires, brakes etc. The ESC-Warning lamp may illuminate if there is significant wear or deterioration in related parts. In such cases, ESC may not work properly.

- The ESC warning lamp may come on when the vehicle is on the turntable at a parking space entrance or any moving object, etc. In such cases, restart the engine after leaving the platform.
- The ESC warning lamp may come on while driving on extremely sloping roads (such as acceleration gradients on racetracks, etc.). Do not drive on such roads as the ESC will not function properly in such cases.
- The ESC warning lamp may come on when the battery cables are disconnected or the battery voltage is low. While the ESC warning lamp is on, the ESC function will turn off, but after the vehicle has been driven normally for a while, the ESC warning lamp will turn off, then the ESC function will continue. If the ESC warning lamp remains on even after driving the vehicle for a while, contact the nearest Isuzu authorized service.

Angular Speed Sensor



The speed sensor is located under the vehicle floor behind the front axle, close to the vehicle's center of gravity.

Axial deviation in the vehicle is detected as instantaneous angular acceleration and transmitted to the brake system control unit in the form of an electronic signal. In a critical situation, how much the vehicle deviates from the route is checked. It provides information on how to activate the stability control functions.

Steering Angle Sensor



The angle sensor, which passes through the steering column, is located under the signal group. It transmits the maneuver request from the driver to the brake system control unit according to the amount of steering wheel rotation. The transmitted information is sent as an electronic signal. Calibration is performed when the system is first installed to match the signal from the sensor with the vehicle's turning angle.

The ESC system will be faulty if the steering wheel is pre-aligned and installed, replaced or renewed. In these cases, the installation should be done in authorized services.

ELECTRONIC BRAKE FORCE DISTRIBUTION (EBD)

EBD is a function that uses ABS to optimally distribute the braking force between the front and rear wheels to compensate for changes in load conditions or load shifts due to acceleration or deceleration, thus preventing the rear wheels from locking up.

CAUTION

- In case of a problem with the EBD function, the ABS warning lamp and the brake warning lamp come on at the same time.
- If there is a problem with the EBD function, the rear wheels will lock more easily. At the first opportunity, go to the nearest Isuzu authorized service and ensure that the control and maintenance is carried out.

NOTE

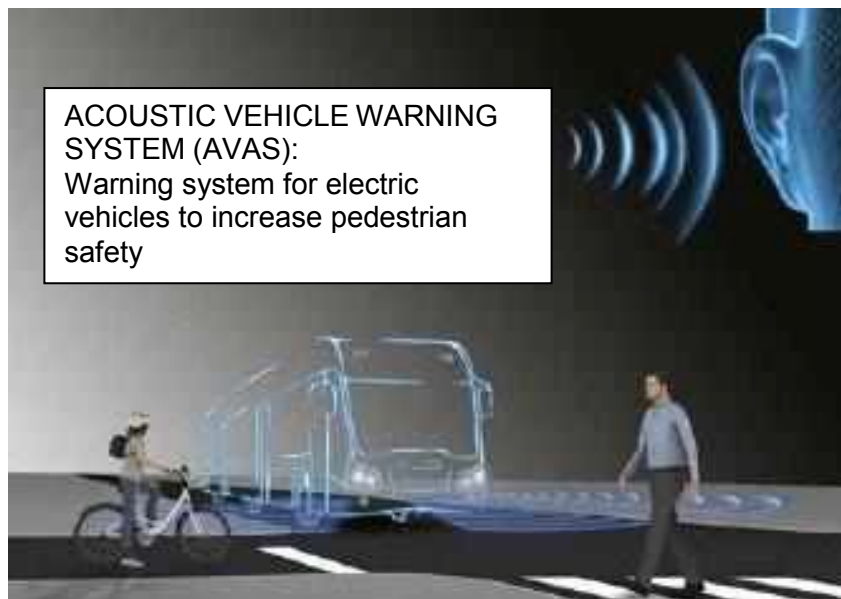
- When the EBD is operating, the brake pedal may kick back slightly or you may hear a sound similar to the one you hear when ABS is operating. None of these situations indicate an abnormal situation.

ACOUSTIC VEHICLE WARNING SYSTEM (AVAS)



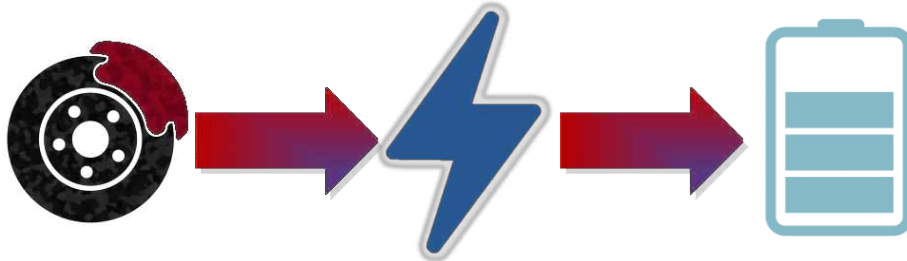
Audible warning system for vehicles with silent engines for PEV (pure electric vehicle), HEV (hybrid electric vehicle) and FCV (fuel cell vehicles).

- Simple engine sound
- Space-saving and compact sensor
- Lightweight single box system
- Low power consumption

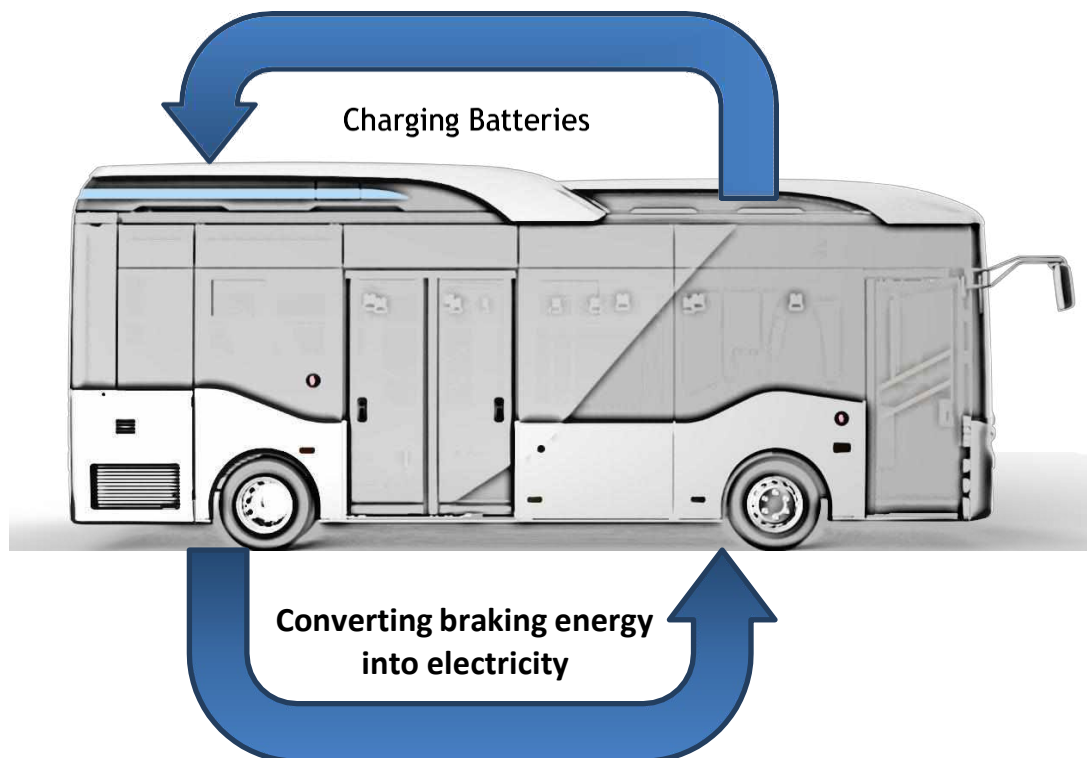


REGENERATIVE BRAKING

Regenerative braking system that acts as a retarder charges the battery at no additional cost, increasing vehicle range.



Up to 20% higher efficiency



ENGINE ROOM FIRE DETECTION SYSTEM

When the fire detection system detects a temperature above 120 degrees in the engine room, it gives a warning with a Red light 🔥 and an alarm on the warning panel.

ENGINE ROOM FIRE DETECTION SYSTEM AND CONTROL UNIT

Control Module

There are Green “ENERGY”, Red “ALARM” and Yellow “FAILURE”, that is, “Sensor” and “Tube” leds on the module. When the system is active and there is no fault, only the Green “ENERGY” led will be on. In case of fire or short circuit on the linear sensor cable, the Red “ALARM” led will turn on, and if the tube or sensor is not active, the yellow “FAULT”, that is, “Sensor” and / or “Tube” fault leds will turn on. If the linear sensor cable is not active, the yellow “Sensor” led is on. If the aerosol tube is not active, the yellow “Tube Fault” led is on.

The control module is located in the driver's seat. It also constantly checks whether the aerosol tube and linear sensor cable are active in the system. The control module is ECE R10 approved.

The control module provides audible and visual warnings to detect the fire and activate the extinguishing tube simultaneously with the signal sent by the linear temperature sensor cable that detects the heat.

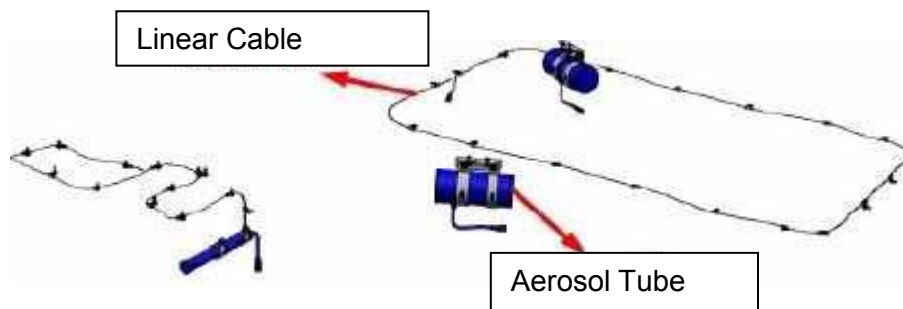


Technical Specifications

Electric activation	1,5 – 24 V cc max 2A
control current	Max 5 mA
Event duration	Immediately
Usage temperature	-20oC to +60oC
Moisture	up to 98% U.R.
fire extinguishing class	A, B, C
Particle size distribution	0.5 – 4 micron
Electrical conductivity	0 – 20KV
Corrosiveness	no
thermal shock	no
Electrostatic discharge	no
condensation event	no
residue after discharge	It is invalid

Linear Heat Detection Cable And Aerosol Tube

Linear sensor cable is specially designed for use in point fire detection systems, which are widely used, in areas where application is difficult due to ambient conditions. The cable works with the principle that the 2 pairs of cables inside it melt and come into contact in the event of a fire. Red colored sensor cable is used for the engine room, which melts at 185 degrees and makes contact. The routing of the sensor cable is as in the image. During routing, the cable should not pass through sharp places and should not be bent too much. In addition, in order to prevent direct contact of the linear cable with external surfaces, its assembly should be done with auxiliary apparatus such as clips, rods, spiral pipes, etc. Otherwise, it may short circuit and activate the aerosol tube. The yellow "SENSOR FAILURE" led on the control modules turns on when the linear sensor cable is disconnected from its socket or there is a break on the line. When it is plugged in again, the fault led turns off. In case of fire or in case of a short circuit on the line, the Red "ALARM" led lights up and the control module activates the aerosol tube if the fire condition continues for 3 seconds.



5. SERVICE AND MAINTENANCE

CLEANING THE VEHICLE

Exterior Cleaning

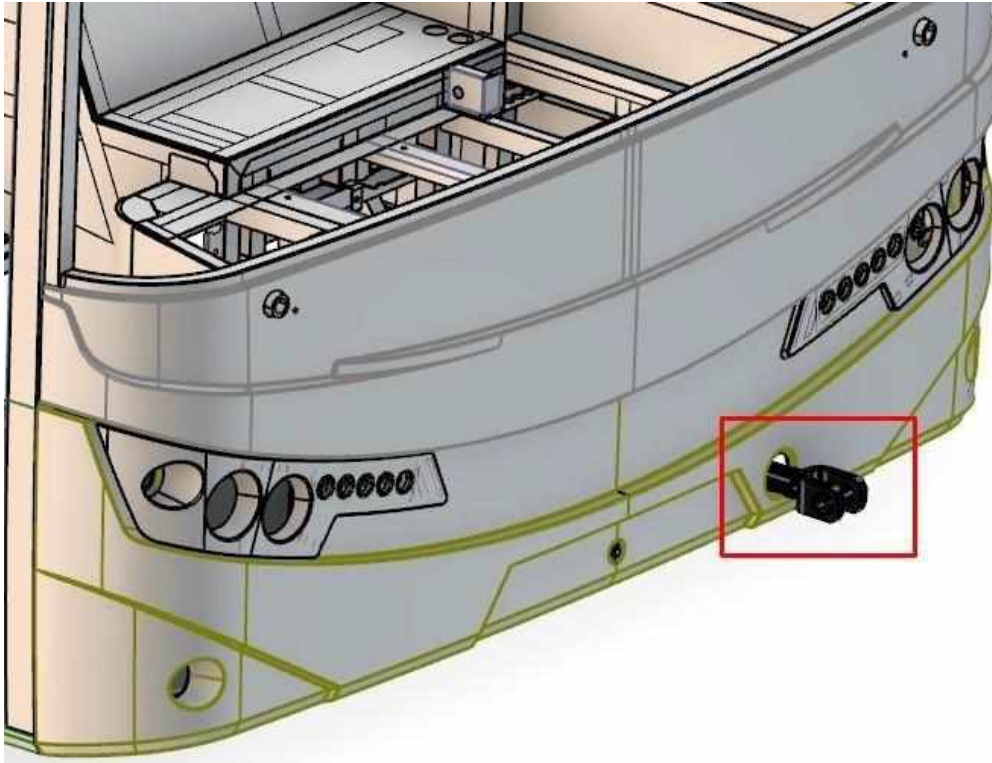
- Do not clean your vehicle with detergents and chemicals, do not wipe with gasoline.
- Use pressurized water for vehicle cleaning (except the engine compartment), make sure that there is no water on the vehicle after cleaning, remove excess water with a cloth or chamois.
- Do not wash your vehicle under direct sunlight.
- Keep the inner parts of the mudguards clean in winter.
- Use only soap and water when cleaning the air bellows.
- There are components operating with high voltage at the rear of the vehicle. Never use water for cleaning this part. There are battery packs in the upper part of the vehicle. Do not open the protection cover on the battery packs except for the technical service.



Internal Cleaning

- Clean the instrument panel with a wet cloth, do not use substances such as alcohol or thinner.
- Clean the seats with a wet cloth or foamed vinylex cleaner.
- Wipe the passenger floor with a wet mop and then dry it.

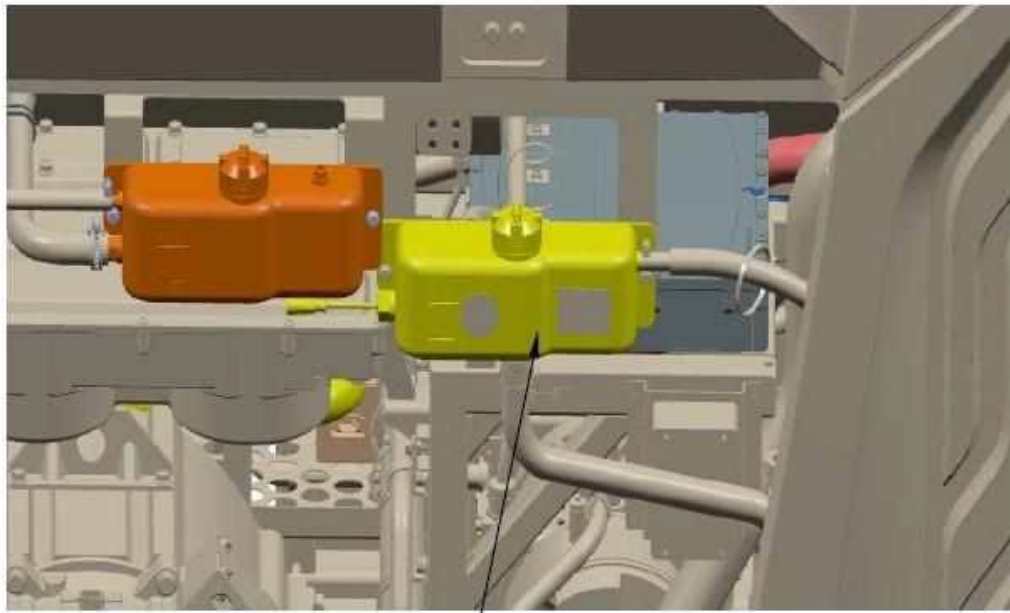
TOWING THE VEHICLE



If there is air in the vehicle, the following operations are applied. If the vehicle does not have air, First of all, the vehicle is taken to the safety lane by using the parking brake release valve (see page 23 Emergency brake release valve). Before towing the vehicle, the parking brake spring in the rear brake chamber must be released.

- Open the tow hook cover on the front bumper.
- Take the tow hook inside the tool box.
- Screw the tow hook well into the slot on the chassis and make sure it is seated.

ENGINE COOLING SYSTEM AND ANTIFREEZE FILLING



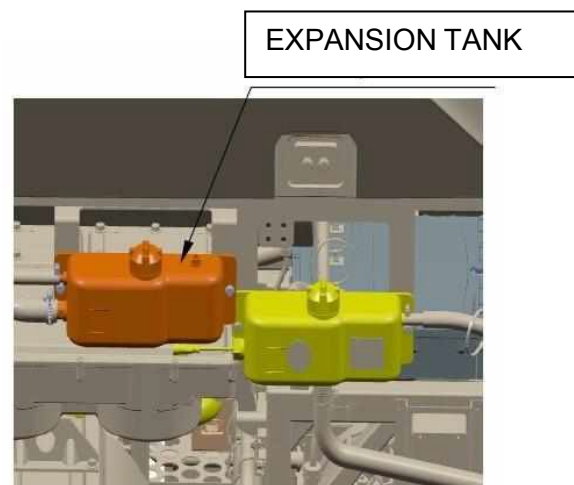
EXPANSION TANK

The engine cooling system keeps the engine in a suitable temperature range, ensuring efficient engine operation and preventing wear of engine parts.

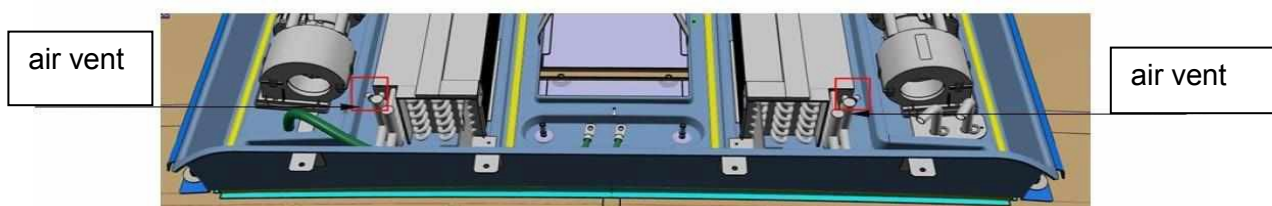
The coolant used in the cooling system is a mixture of 50% water and 50% antifreeze. The freezing point of this mixture is -36°C , the boiling point is $+175^{\circ}\text{C}$. No additives should be used in the coolant.

1. Park the vehicle on a flat area.
2. Open the cover of the expansion tank located on the right side of the engine room.
3. Start filling the expansion tank with Castrol Radiocool SF (Red) engine coolant with a 50/50 antifreeze-water mixture.
4. When the expansion tank is full, stop filling. Wait 1-2 minutes to allow the air entering the system to discharge naturally and the coolant level to stabilize. Then add water to the tank again.
5. Start the cooling line pump from the cluster.
6. Continue to add antifreeze to the expansion tank as the level in the expansion tank decreases.
7. Expansion tank max. After it is fixed at the level, close the expansion tank cover.
8. Stop the cooling system pump from the cluster.

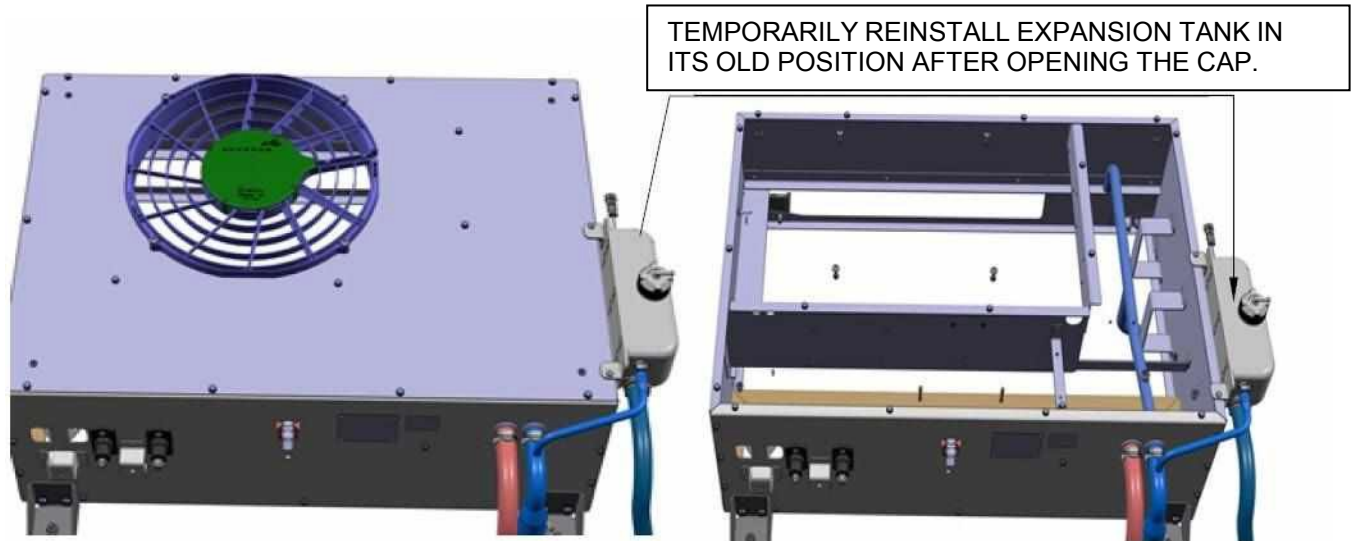
HEATER AND AIR CONDITIONING LINE FILLING AND AIR BURING OPERATIONS



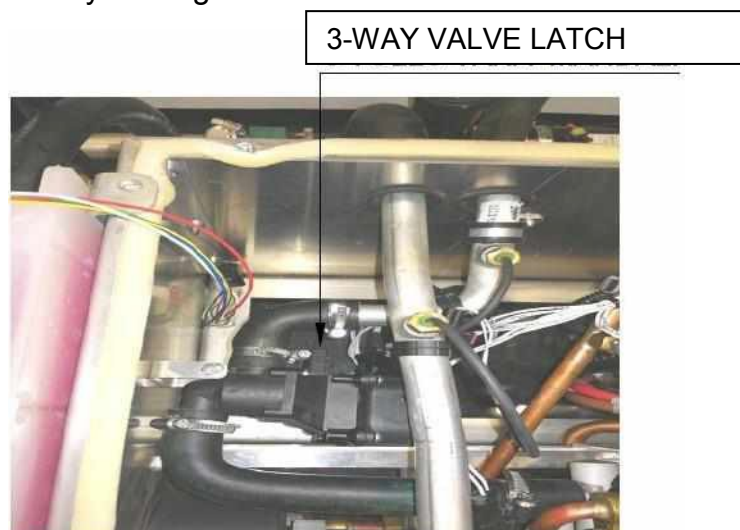
1. Park the vehicle on a flat area.
 2. Open the cover of the expansion tank on the left side of the engine room.
 3. Start filling the expansion tank with Castrol Radiocool SF (Red) engine coolant with a 50/50 antifreeze-water mixture.
 4. When the expansion tank is full, stop filling. Wait 1-2 minutes to allow the air entering the system to discharge naturally and the coolant level to stabilize. Then add water to the tank again.
 5. Press the S9 Button on the vehicle's air conditioning control repeatedly until the "----" sign appears and start the 15-minute test mode of the heating system.
 6. Heaters, heater main pump, heated air conditioner pump within 15 minutes test mode; The valves and fans that control the driver, passenger and heated air conditioning will open.
 7. During the test mode of 5 minutes, the max. Keep adding antifreeze up to level.
 8. In the test mode, open the side core and defroster vents for 1-2 minutes and perform the air bleed process in the relevant cores.
 9. After the side core and defroster air removal processes are completed, start the air extraction process on the cores in the air conditioning unit.
 10. Carry out the air purge operation from the vents of the heater cores in the air conditioning cabinet for 15 minutes in order for each core.
 11. 15 minutes after the start of the test mode, the pump and valves will be turned off, so the expansion tank
 12. Close the expansion vessel lid towards the end of the 15-minute period in order to prevent the antifreeze from overflowing.
- After the test mode is turned off, run the test mode again and continue to add antifreeze to continue the air intake process.



BATTERY COOLING SYSTEM ANTIFREEZE FILLING

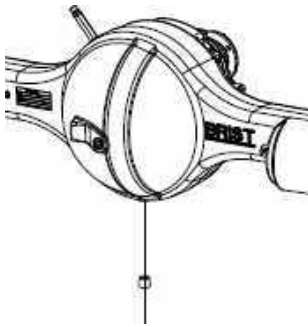


1. Park the vehicle on a flat area.
2. Remove the cover of the battery cooling unit located on the roof of the vehicle.
3. Position the expansion tank so that it remains above the battery cooling system.
4. Open the expansion tank cover.
5. Start filling the expansion tank with Castrol Radiocool SF (Red) engine coolant with a 50/50 antifreeze-water mixture.
6. When the expansion tank is full, stop filling. Wait 1-2 minutes to allow the air entering the system to discharge naturally and the coolant level to stabilize. Then add water to the tank again.
7. Start the battery cooling line pump from the cluster.
8. As the level in the expansion tank decreases, max. Continue to add antifreeze to the expansion tank up to the level.
9. After the expansion tank is fixed at the max level, turn the latch of the 3-way valve inside the coil cooling unit in the opposite direction.
10. As the level in the expansion tank decreases, max. Continue to add antifreeze to the expansion tank up to the level.
11. Close the cap when the expansion tank level is stabilized.
12. Stop the battery cooling system pump from the cluster.
13. Close the battery cooling unit cover.

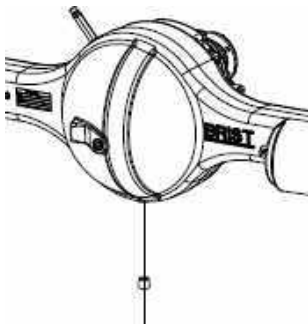


DIFFERENTIAL OIL CHANGE

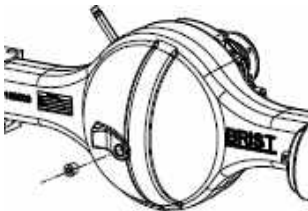
Place a bucket under the drain hole for used oil, as the oil will drain when the magnetic plug is removed.



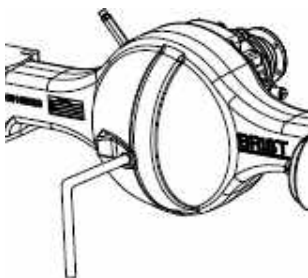
Remove the magnetic plug to drain the oil.



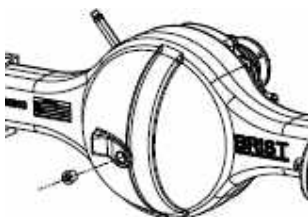
Reinstall the magnetic plug, tighten with a torque of 60 Nm.



Remove the plug.



Fill the oil. (Oil capacity: 5.7 lt)



Tighten the plug with a torque of 60 Nm.

CHECKING BRAKE DISCS AND PADS

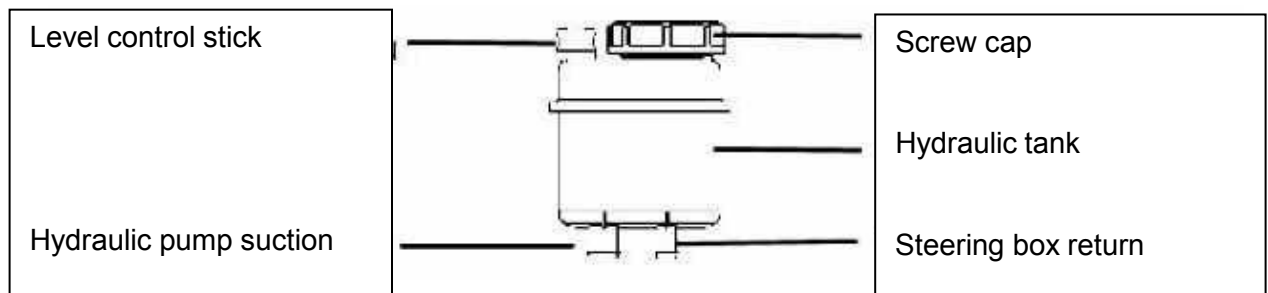
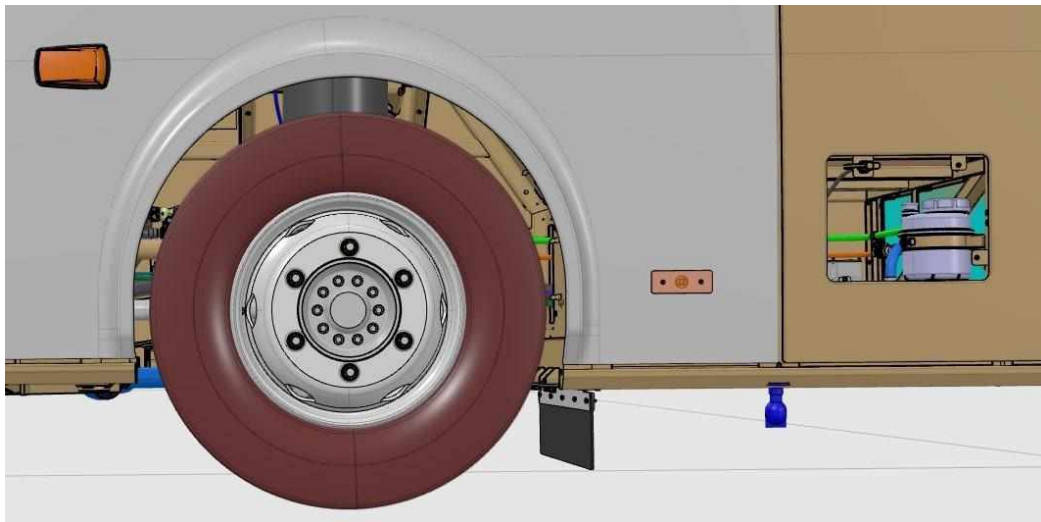


The pad wear indicator should be checked regularly. When the pad indicator reaches 10%, Isuzu service should be contacted for replacement.

Right and left brake pads on the same axle must be replaced together. The original brake part defined by the vehicle manufacturer must be used. Brake discs should also be checked during pad replacement and replaced if necessary. Otherwise, braking performance may be adversely affected.

STEERING HYDRAULIC TANK

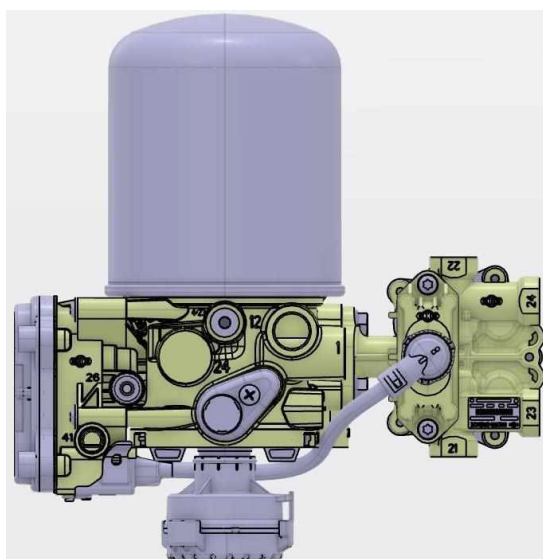
The steering oil tank is located behind the left front wheel, accessible through the maintenance hatch behind the left front wheel.



There is a screw cap and oil level dipstick on the tank. The oil level should be checked every 3000 km. To check the oil level, the rod is removed, there are minimum and maximum lines on the rod, the oil level should be between these two lines. For trouble-free operation of the power steering and pump, the oil specified by the vehicle manufacturer must be used.

If there is not enough oil in the steering system, the vehicle should not be started; otherwise the steering wheel may be damaged. If the amount of oil is low, oil must be filled up to the maximum line on the rod.

SMART AIR DRYER



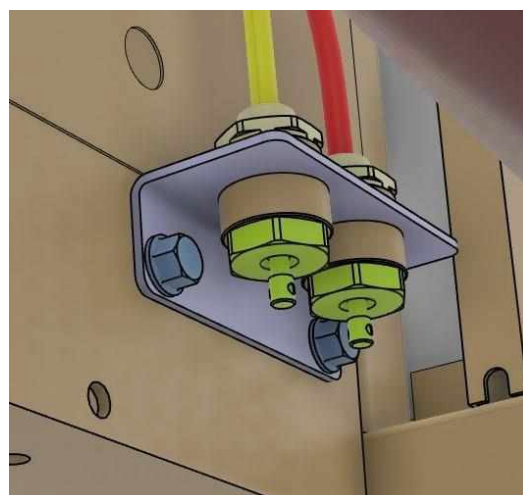
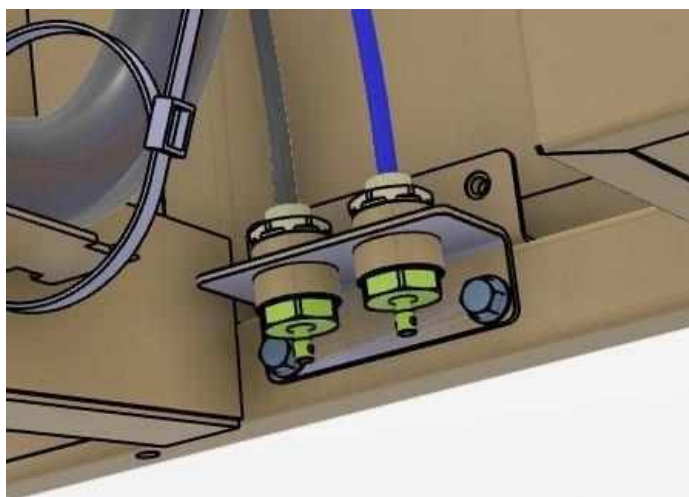
Air dryer + Four-way valve (IAPU) is located in the area behind the left front wheel of the vehicle. The task of the IAPU is to take the moisture and oil in the air pressed from the compressor, adjust the system pressure of the vehicle and send the air to the vehicle air tanks under appropriate conditions.

At the top of the IAPU is a cartridge with a maintenance interval. At the bottom, there is a silencer that reduces the sound while expelling the air.

When the air of the vehicle reaches the desired limit, it throws out the water and oil accumulated in the cartridge with some air. It stops the compressor from running by informing the compressor.

The smart air dryer activates the air compressor when the air system pressure drops to 8.3bar and turns off the air compressor when the air system pressure reaches 9.8bar

DRAINING THE ACCUMULATED WATER IN AIR TANKS



There are 2 water drains (front brake tank and hand brake release tank) in the front part of the left front wheel.

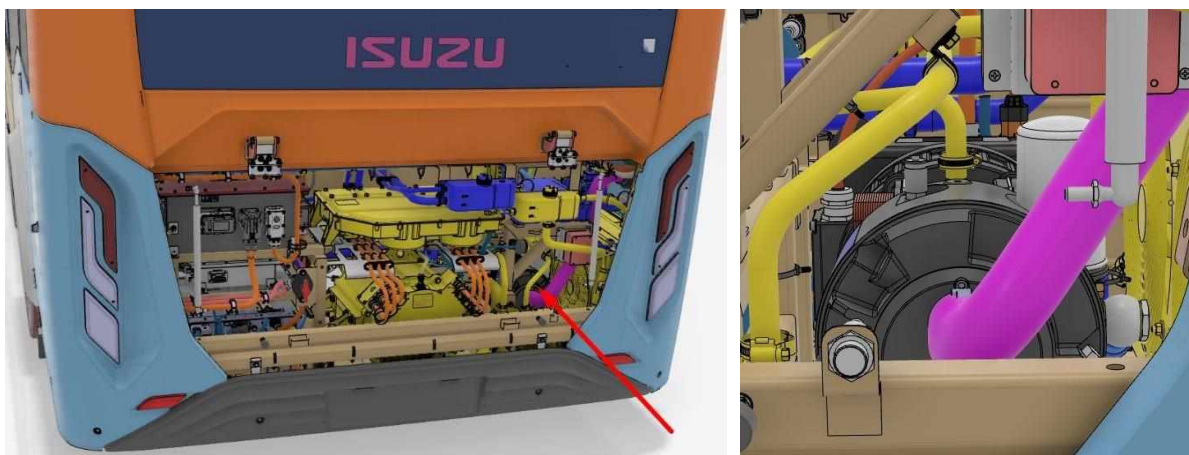
There are 2 water drains (rear brake tank and accessory tank) in the front part of the right rear tank.

Daily, the water that accumulates by condensing in the air tanks should be discharged by pressing the pin under the drain.

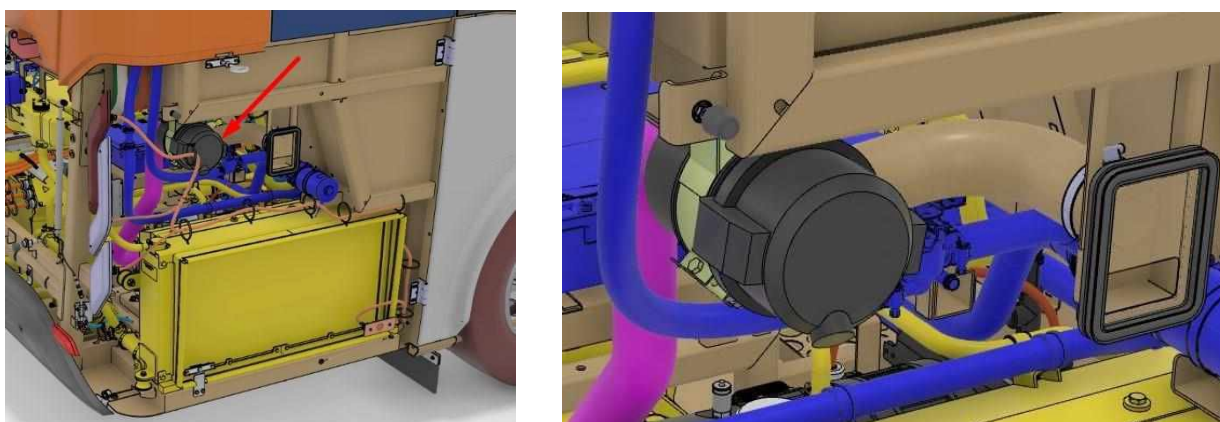
ELECTRIC AIR COMPRESSOR

As seen in the pictures below, the air compressor is located in the rear engine room of the vehicle between the radiator and the engine.

When the right side cover of the engine room is opened, the air compressor air filter is reached in the upper part of the radiator. Replace the cartridge here.



Position of air compressor



Location of air compressor air filter

GLASS SPRAY WATER TANK



The glass fountain water tank can be accessed by opening the front left body cover. After opening the door, a maximum of 10 liters of washer fluid can be filled.

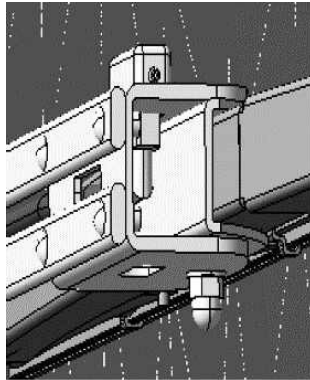


Antifreeze should be used to prevent the glass from freezing in cold weather.

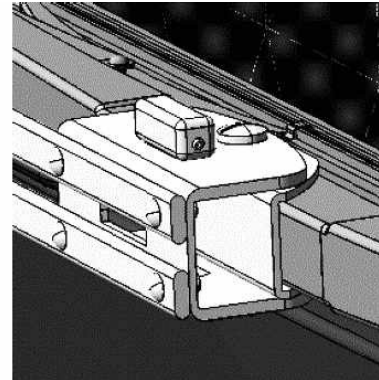
REPLACING THE WINDSCREEN WIPER

There are two outer wiper arms, right and left.

To replace the wiper blade, remove the bolt and ring nut in the middle of the blade (Picture 1 and Picture 2).

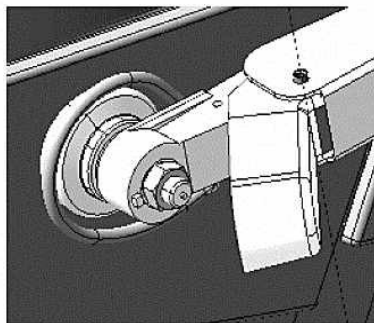


Picture 1

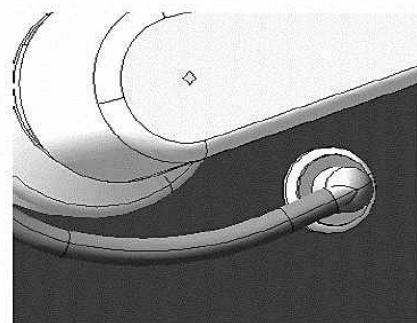


Picture 2

In order to replace the entire outer wiper arm, the plastic cover at the point where the arm is connected to the vehicle body is opened, the ring nut here is removed and the wiper arm is removed (Picture 3).



Picture 3



Picture 4



Wiper blades should be checked in winter and replaced if necessary. Changes in the internal mechanism of the wipers should be made by authorized services.

FUSE/RELAYS



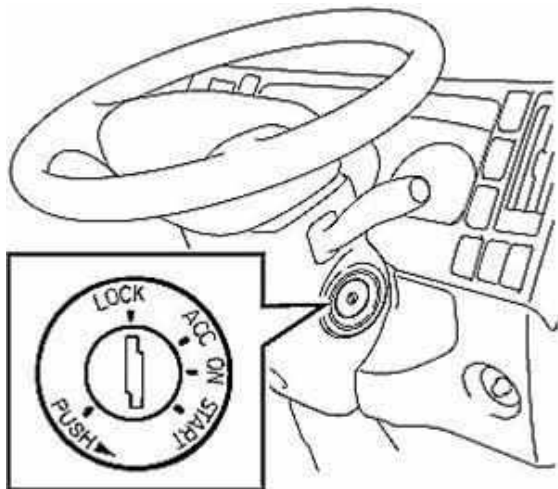
Fuse and relays are located in two different places in the vehicle. The fuses used in the vehicle are blade type. In the event of a short circuit or malfunction in the system, the relevant fuse blows to protect the electrical components. After the electrical fault is cleared, it is replaced with a fuse of the same amperage Value.

- 1- It is located in the cabin at the bottom right of the front door entrance of the vehicle. The fuse label is on the console cover.
- 2- It is located inside the left rear cover of the vehicle. The fuse label is visible when the cover is opened.

PRECAUTIONS FOR BATTERY USE

Keep the battery clean. If the battery is left dirty, contaminants can mix with the battery fluid, damage the battery plates, short-circuit the top of the battery and reduce the battery's service life.

When Performing Inspection or Maintenance Operations



Before checking and maintaining the battery and other parts of the electrical system, turn the ignition switch to the "LOCK" position, turn all other Buttons to the "OFF" position and disconnect the battery negative cables.

There is a danger of damage to electrical parts if inspection or maintenance is performed while the battery remains connected.

Battery Removal

When removing the battery, first disconnect the battery cable from the negative pole. If the battery cable remains connected to the negative terminal, if the tools come into contact with the positive terminal, a short circuit may occur in the vehicle and cause dangerous electric shocks. Also, the electrical system may be damaged.



If the battery switch is to be turned off, wait at least 70 seconds after the ignition is turned off.

Charging the Battery

- Before replacing the battery, remove the battery from the vehicle, place it in a well-ventilated area and remove the battery covers. If the battery is to be charged while inside the vehicle, be sure to disconnect the battery cables first.
- Make sure it is turned off when the charger is connected to or disconnected from the battery.
- In case of fast charging, the battery cables must be disconnected. Failure to follow this precaution could result in the alternator running out of fuel.

Installing the Battery

1. When installing the battery in your vehicle, make sure it is correctly oriented and securely installed without any looseness. If the battery is not installed correctly, the battery box and battery plates may be damaged as a result of jolts while driving.
2. When connecting the battery cables, start with the positive pole and then connect the negative pole.

Using the Battery as a Direct Power Source

The battery should not be used directly as a 12 volt power source.

If your battery needs to be used as a direct power source, consult your Isuzu authorized service.

Checking the Battery Water Level Daily Check

Open the battery cover and check if the liquid in the battery chamber is within the specified range.

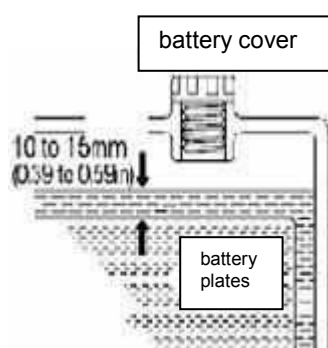
The battery fluid surface should be between "UPPER LEVEL" and "LOWER LEVEL."

If the

fluid surface cannot be seen clearly, gently shake the vehicle.

If there is no level mark on the case, a 10-15 mm gap from the top to the battery plates is considered appropriate.

Filling the Battery Water



If the amount of battery fluid in the battery is not sufficient, remove the caps, add distilled water until the surface is close to the "UPPER LEVEL" mark or 10-15 mm from the top to the battery plates. After you have finished checking the oil level, securely attach the cap and cap.



- Battery water should never be filled above the "UPPER LEVEL" line. Failure to observe this precaution may result in battery water spilling and corrosion of battery terminals and other parts. Spilled battery water should be cleaned immediately with water.
- After adding battery water, the battery must be recharged (by driving). If you do not recharge the battery during the winter months, the battery water may freeze and the battery box may be damaged.
- If the battery water level continues to drop rapidly, which may rarely occur, have a service performed at the nearest Isuzu authorized service immediately.

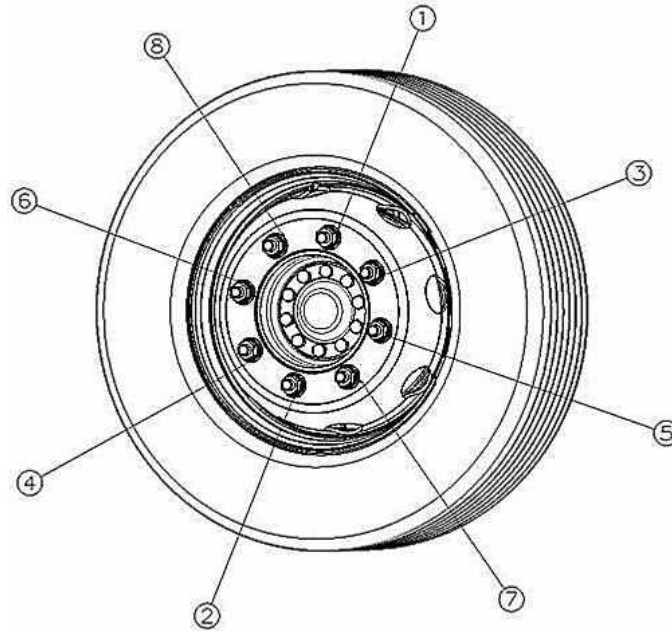
JACK USE AND TIRE CHANGE

The jacking points on the vehicle are in front of the front wheels and behind the rearwheels. When using the jack;

- Make sure the drain screw is tight.
- Use your own jack handle to raise the jack
- Turn the drain screw counterclockwise two turns to lower the jack.

Tire change;

- Place a wedge on the tire diagonally opposite the tire you are lifting.
- Loosen the wheel nuts of the tire to be replaced, but do not remove them.
- Jack up the vehicle using the jack point on the back of the tire to be replaced until the tire is completely off the ground.
- Remove the wheel nuts and tire.
- Install the spare tire
- Make sure the tire is seated
- Tighten the diagonal opposing wheel nuts with a torque of 500 ± 50 Nm in three stages.



- Slightly loosen the evacuation screw on the jack to lower the vehicle.



- Make sure the jack is placed on flat and solid ground.
- Do not start the engine while the vehicle is on the jack.
- Do not get into the vehicle while the jack is being used.
- Unload the passengers before starting the tire change.
- Make sure the gear is in the park position, set the parking brake and turn on the hazard warning flashers.
- If there is a high voltage line around during tire change, tire change should not be made.
- Equipment to be used must be insulated.
- When the vehicle is jacked up, it is necessary to enter between the wheel and the fender or under the vehicle. Getting under the vehicle and between the fenders can result in death.

NOTE: If the tire pressure is constantly decreasing, there may be an object stuck in the tire. Check whether there is an air leak in the tire or the valve.

EASY SERVICEABILITY

Easy access to the necessary components is provided by opening the rear cover and side covers for the modifications to be made on the vehicle in case of vehicle maintenance or breakdowns.



CORROSION & PREVENTIVE METHODS

What is Corrosion?

Corrosion is a state of deterioration in metals (steel, copper, zinc, aluminum and their compounds) caused by oxidation or chemical action.

Observation

- Red rust on steel parts,
- White spotting on zinc parts,
- White spotting on Dacromet / Geomet coated parts,
- Green rust on copper parts,
- White spotting on aluminum parts.

Corrosion Causes

1- User Errors

Failure to comply with the rules specified in the user, workshop warranty and service manuals may cause corrosion.

2- Environmental Factors

Environmental and geographical factors determine corrosion factors.

Corrosion Zones

Anti-corrosion methods can be applied to three main areas on the vehicle;

- Not responding to the scratches on the painted parts of the vehicle in a timely manner,
- Failure to comply with preventive maintenance procedures,
- Failure to comply with preventive activities before the winter season
- Hot and humid areas (eg seaside)
- Cold and snowy areas (road defrosting)
- Cold and rainy regions,
- Industrial zones
- Additional applications (solid or liquid salt) to open public roads)

A SECTION A (Engine Compartment)

B SECTION B Chassis(including trunk component)

C SECTION C Side Panels and other vehicle



Corrosion Maintenance Procedure

Every vehicle should be checked every 6 months. If the vehicle is not checked, it will be out of warranty. If the vehicle is damaged, it must be repaired so that there is no rusting problem.



DİKKAT

Internal profiles should be checked every year, if wax is removed, wax1 treatment is applied to the required structure of the body with service



DİKKAT

On the underbody coating, peeling and shedding should be checked 3 times during the winter season. Before the start of the winter season, the end of January (when the high winter season is the end of October), the end of the winter season If there is wear, the coating² should be renewed in the necessary areas



CAUTION

It is recommended to wash the vehicle with low-pressure water at least once a week and the underbody at least once a month in order to prevent the contamination from damaging the chemicals. High pressure water causes wear on the underbody lining. If any signs of corrosion are confirmed, restart without delay.

PERIODIC MAINTENANCE

BEFORE DRIVING

Proper maintenance and driving is important not only in extending the service life of your vehicle, but also in the battery and electric motor.

Check Daily

For safe and comfortable driving, record the distances traveled and the condition of the vehicle while driving. Perform inspections at appropriate intervals and perform maintenance according to inspection findings. If an inspection reveals an abnormality or if the vehicle has had an abnormality from previous driving, take the vehicle to the nearest Isuzu Dealer before being driven again.

Daily Checks Checklist:

1. Checking components that showed abnormalities during previous driving
2. Electric motor coolant level
3. Power steering fluid level
4. Fan hydraulic fluid level
5. Brake system air pressure level
6. Brake pedal release
7. Exhaust noise from brake valve
8. Increase/decrease of air pressure level
9. Operation of meters, indicators and warning/indicator lights
10. Parking brake
11. Windshield washer fluid spray status and windshield wiper activity
12. Windshield washer fluid level
13. Steering wheel clearance and mounting condition
14. Operation of horn and turn signal lamps
15. Battery charge level
16. Lighting, flashing or damaged lights
17. Battery fluid level
18. Drain the condensed water (especially in winter) in the air tanks.
19. Electric engine coolant, brake fluid, power steering fluid, fan hydraulic fluid leak
20. Air pressure
21. Cracks and other damage
22. Abnormal wear
23. Tread depth of tires
24. Disc wheel assembly status
25. Brake efficiency
26. Checking the engine at low speeds and accelerations
27. Wear and corrosion control of chassis and body parts
28. Check the bus crash and original part condition.

Weekly Maintenance

- Check the tire pressures with the weather clock.
- Check the steering fluid tank level.
- Check the air suspension bellows (holes, damage, etc.) while the engine is running.
- Check the air cleaner limit.
- Check the washer fluid level.
- Wear and corrosion control on chassis and body parts

CAUTION!

- Water jet cleaning machine should not be used inside the bus.
- Abrasive materials should not be used on the bus surface.
- The car should not be washed with a car wash brush.
- Informing the authorized service in case of accident
- Regular maintenance at authorized service

Periodic Maintenance Chart

The main periodical maintenance interval is 240000 km. Maintenance after 240000 km is the same as maintenance intervals after 30000 km.

I: Inspect then clean, repair or replace as necessary

R: Replace

A: Adjust

L: Lubricate

NOTE: Change the filter/fluids before the recommended distance or month, whichever is earlier.

Electrical System Components

Maintenance Interval (x1000 km)	30	60	90	120	150	180	210	240
PDU electrical connections				I				I
DC/DC Converter electrical connections				I				I
High voltage system electrical connections				I				I
On-board charger electrical connections				I				I
Air conditioner inverter				I				I
Intelligent air dryer filter replacement	R: every 12 months							
Electric power steering pump	I: every 12 months							
Electric steering pump bearing replacement	R: every 200,000 km							
External cleaning of the electric radiator		I		I		I		I
Electric fan function check	I	I	I	I	I	I	I	I
Checking the socket connections on the battery	I	I	I	I	I	I	I	I
Checking the connections of the battery to the chassis	I	I	I	I	I	I	I	I

Electric motor

Maintenance Interval (x1000 km)	30	60	90	120	150	180	210	240
High voltage cables wear check	I	I	I	I	I	I	I	I
High voltage and phase cable glands tightness (MCU and Motor)	I	I	I	I	I	I	I	I
Motor phase cables wear check	I	I	I	I	I	I	I	I
Checking the motor sensor cable and connectors	I	I	I	I	I	I	I	I
Checking the VMU interface connector	I	I	I	I	I	I	I	I
Coolant in/out MCU leak check	I	I	I	I	I	I	I	I
Coolant in/out engine leak check	I	I	I	I	I	I	I	I
Engine component check	I	I	I	I	I	I	I	I
MCU component control	I	I	I	I	I	I	I	I
MCU ventilation control	I	I	I	I	I	I	I	I
Coolant level control	I	I	I	I	I	I	I	I
Coolant change		R		R		R		R
Engine and MCU cleaning	I	I	I	I	I	I	I	I

Electric Air Compressor

Maintenance Interval (x1000 km)	30	60	90	120	150	180	210	240
Oil level control	I: Once a week							
Oil change		R		R		R		R
Filter change		R		R		R		R
Annual service check		I		I		I		I

Axles

Maintenance Interval (x1000 km)	30	60	90	120	150	180	210	240
Front axle king pin bearing grease	L	L	L	L	L	L	L	L
Front axle covers	I	I	I	I	I	I	I	I
Front axle bushings	I	I	I	I	I	I	I	I
Differential oil		R		R		R		R
Differential leak filter	I	I	I	I	I	I	I	I
Rear axle breather cleaning and changes	I	R	I	R	I	R	I	R
Rear axle and brake caliper link	I	I	I	I	I	I	I	I

Hydraulic wheel

Maintenance Interval (x1000 km)	30	60	90	120	150	180	210	240
Power steering oil	R: every 240,000 km or 24 months							
Power steering tank oil level check	I: every 3000 km							
Oil leak in the power steering system	I	I	I	I	I	I	I	I
Hydraulic steering linkage	I	I	I	I	I	I	I	I
Power steering hose	I	I	I	I	I	I	I	I

General Vehicle Care

Maintenance Interval (x1000 km)	30	60	90	120	150	180	210	240
Front suspension links	I	I	I	I	I	I	I	I
Rear suspension links	I	I	I	I	I	I	I	I
Wheel nuts	I	I	I	I	I	I	I	I
Tire pressures	I	I	I	I	I	I	I	I
hub bearing	I	I	I	I	I	I	I	I
Leakage in brake pipe and brake hose	I	I	I	I	I	I	I	I
Checking the brake pad and disc	I	I	I	I	I	I	I	I
Slack in shock absorbers and fasteners	I	I	I	I	I	I	I	I
Level valves	I	I	I	I	I	I	I	I
Air bellows	I	I	I	I	I	I	I	I
ESC system control	I	I	I	I	I	I	I	I
Rear and front brake system control	I	I	I	I	I	I	I	I
Brake, turn signal, parking and fog lamps	I	I	I	I	I	I	I	I
Interior lighting	I	I	I	I	I	I	I	I
Windshield wiper and washer system	I	I	I	I	I	I	I	I
Fuse panel wiring and socket connections	I	I	I	I	I	I	I	I
Battery connection cables	I	I	I	I	I	I	I	I
Battery electrolyte density	I	I	I	I	I	I	I	I
Air door adjustment	I	I	I	I	I	I	I	I
Safety gear function of all doors	I	I	I	I	I	I	I	I
Air leakage, damage, tightness and door function in door elements	I	I	I	I	I	I	I	I
Rearview mirrors parts	I	I	I	I	I	I	I	I
Gas and brake pedal	I	I	I	I	I	I	I	I
Underbody wax checking and repairing	I: once a week							
Washing the entire bus, making sure to remove all road chemicals	I: once a week							
Check bus accident and original parts situation.	I: daily							
Air condition compressor oil	K : every 24 months & D : when decreasing							
A/C compressor oil	K : every 24 months & D : when decreasing							

NOTE

- Cartridge (filter on the smart air dryer) needs to be changed at 1-year intervals or when the iAPU gives a warning (before the 1-year period expires).
- The differential leakage filter should be cleaned at every inspection.
- For the fire extinguishing system; extinguishing fluid should be changed every 5 years, tanks should be changed every 10 years.
- In severe conditions (frequent short driving distances, dusty or bumpy roads, towing a trailer or mountain climbing), maintenance intervals should be halved.
- The air intake filters of the air conditioner should be removed and cleaned weekly. The time may be extended depending on the pollution situation.
- Since the air conditioner air intake filters can be reused, they are not easily deformed. It should be changed when it is excessively deformed and there is visible deformation in the filter.
- Suspension bushings (stabilizer and other) should be replaced if 30.000 km wear control is required.

6. TECHNICAL INFORMATION

Dimensions (mm)	
Maximum length	7957
Max width	2463
Maximum height	3250
Wheelbase	4259
Front length	1947
Back length	1753
Front track width	2093
Rear track width	1900
Interior height	2463
Weights (kg)	
Max loaded weight	11600
Front axle capacity	4500
Rear axle capacity	7100
Engine	
Model	TM4 HV2200
Medicine	Electric Traction Motor - Direct Drive Resistorassisted permanent magnet
Drive type	Battery Electric Vehicle
Maximum Power (kW)	255 kW
Maximum Torque (kW)	2355Nm
Max Speed	100km/h
Climbing Ability (at Max Loaded Weight)	21%
Tires	245/70 R17.5
Suspensions	
Front	Rigid axle, Air Suspension, 2 Air Bellows, 2Hydraulic Shock Absorbers
Back	Air Suspension, 4 Air Bellows, 4 HydraulicShock Absorbers
Anti-roll bar	Front anti-roll bar (S) Rear anti-roll bar(O)
Brake system	
Front / Rear	Disc / Disc
Short description	ABS, ASR (ESP/ESC), EBS Dual Circuit, Electronic Actuated Full Air Brake System
Parking brake	Airy, effective on the rear axle
Auxiliary brake	Regenerative brake
Electrical System	
Rated voltage	24V
Accumulator	105 Ah (Happy)
Electrical System-Electric Vehicle	
Operating voltage	600 V
Compliance with ECE-100 r2	Yes
Battery Type	Lithium Ion (LFP Hybrid)
Battery Capacity	211 kWh (S); 268kWh (O)
Battery Position	Vehicle roof part
Range (km)	Option-1 (211 kWh) Up to 300 km (Non Air Conditioned) Up to 200 km (Air Conditioned)
Guarantee	8 years 80% charge in 8 years with overnight charge
Air conditioning	capacity: 18 kW + 3.5 kW

NOTE: Technical Values stated are approximate, may vary depending on vehicle type and options.

PRESSURE VALUES		
Four Way Protective Valve	Static Shutdown Pressure	> 5.5 Bar
Air Dryer	Minimum Opening Pressure	8.3 Bar
Air Dryer	Maximum Closing Pressure	9.8 Bar
tires	Cold Inflation Pressure	8.5 bar / 123 psi

OIL AND LIQUID PROPERTIES			
DEFINITION	CAPACITY	NORM	CLASS
Differential oil & rear axle	5.7 lt	SAE 75W 90	API GL 5
Power steering fluid	3.5 lt	GM Dexron – III	AUTRAN DX III
Electric air compressor oil	1 lt	ISO Viscosity Grade 68	-
Presuspension Greasing	0.3 lt	DIN51825: KP2K-20 ISO-L-XBCEB2	ZFTE-ML12G
A/C compressor oil	150 ml	FV68H (PVE)	IDEMITSU KOSAN
Antifreeze (50%) + Water (50%)	55.3 lt	ASTM D1120	CASTROL RADICOL SF
A/C gas	4.4 kg	R407C	-

7. AUTHORIZED SERVICES

COUNTRY	STORE NAME	STORE ADDRESS	CONTACT NUMBER
ALGERIA	Spa Elsecom	Rue Baha H'med, BP 200 Bab Ezzouar - Alger	+213 (0)23 85 30 86
AZERBAIJAN	AZ Auto LLC	2207 Nobel avenue AZ1006 - Bakü	+(994) 124964598
BOSNIA	Sejari d.o.o. Sarajevo	Blažuj 78, 71215 Blažuj - Sarajevo	+387 33 770 306
BULGARIA	Isubus Ltd.	Botevgradsko Shose Blvd. 1839 Sofia	+(359) 28182929
CROATIA	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
2021**