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CONTENTS

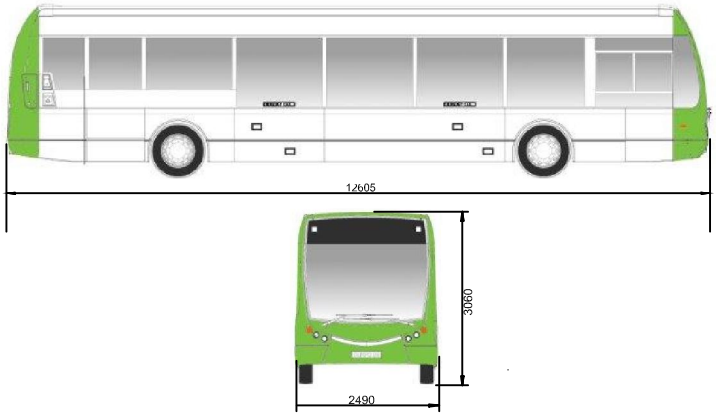
SCOPE

This handbook covers the following Optare Tempo models with standard Euro 5 mechanical specification.

DESIGNATION

All dimensions in millimetres

MODEL	LENGTH	WIDTH	HEIGHT
X1260	12605	2490	3060



The information appearing in this handbook is applicable to vehicles manufactured at the time of printing. The manufacturer therefore reserves the right, while retaining basic features of the models described and illustrated herein, to make at any time and without necessarily bringing this book up to date, any alterations to units, parts or accessories deemed convenient for improvement or commercial reasons.

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Driving Instructions	Page 36
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INTRODUCTION

Your Optare Tempo is designed and built for safe and reliable use.

INTRODUCTION

This hand book is a guide towards the safe and efficient use of your Optare Tempo.

Service information, other than routine/daily checks is not contained within this handbook.

Service information is contained in separate documentation and is available from Unitec.

Spare parts are available from Unitec.

Items of safety are indicated with the symbol: ⚠

⚠ PASSENGER SAFETY

Prior to the vehicle being driven on the public highway, all drivers (and crew) must be conversant with position, access and operation of emergency exits, fire extinguisher(s), first aid kit(s), emergency engine stops, battery isolation switch and safety devices.

⚠ SEAT BELTS (IF FITTED)

Drivers, crew and passengers should always use seatbelts when travelling in the vehicle. The seatbelts must be correctly adjusted and never used to restrain more than one person. Children (according to size) should always be carried in a restrained carry cot, child seat or child booster cushions with adult belts.

⚠ HEATER DUCTS AND HOT AIR OUTLETS

Do not place flammable or pressurised liquid near any hot air outlets or windscreen demister louvres.

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INTRODUCTION

WHEN LEAVING YOUR VEHICLE UNATTENDED

DO Always remove the ignition key where fitted even in your own garage, close all windows completely and secure all doors. Always park your vehicle where it can be seen at night, park in a well lit area.

a. DO NOT Leave children or animals in the vehicle when unattended.
b. DO NOT Leave valuables on view.
c. DO NOT Leave the vehicle documents in the vehicle.

MAINTENANCE

Always keep cleaning fluids, oils, hydraulic fluids, greases safely locked away.

Always read the health & safety precautions on the containers. Avoid skin contact.

THE ENGINE COMPARTMENT

When checking items in the engine compartment with the engine running, ensure that no article of clothing can become entangled with the drive belts to auxillary components.

UNDER THE VEHICLE

Never work under a vehicle that is only supported on a hydraulic jack. Use rigid supports which correlate to the maximum unladen weight.

READ THIS HANDBOOK PRIOR TO:-

BEING TOWED	(PAGE 45)
JACKING THE VEHICLE	(PAGE 46)
REFITTING WHEELS	(PAGE 47)
REPLACING ANY FUSES	(PAGE 31)

VEHICLE MODIFICATIONS

Stringent regulations governing the design and manufacture of passenger service vehicles are imposed in the United Kingdom. The Tempo is built to the C&U / DDA standards. Alterations to the vehicle after purchase (e.g. change of settings or adjustments, fitting unsuitable or unapproved parts) can result in a deviation from the C&U / DDA specification. Such deviations may have legal consequences, in which case Optare can except no liability in respect of vehicle failure caused directly or indirectly by such alterations.

Parts fitted to the Optare Tempo must be of the same manufacture and specification as fitted by Optare as original equipment. Spare parts and materials are available from Unitec and/or in certain cases from suppliers of original equipment to Optare. There are no alternatives to these parts and materials, and even those marketed making such claims must not be used.

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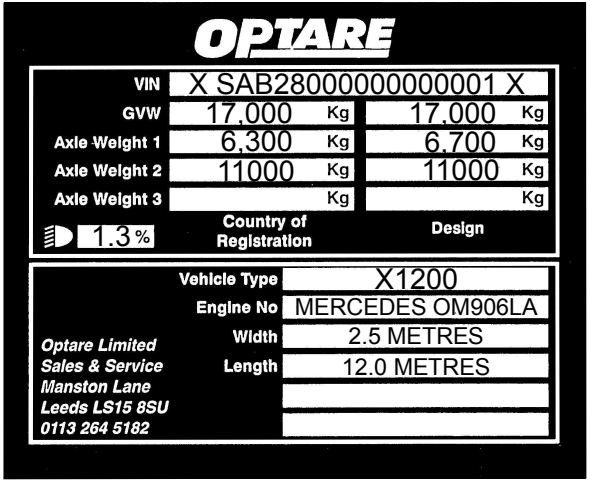
INTRODUCTION

VEHICLE IDENTIFICATION

Vehicle Identification Number (V.I.N.) plate is located below the entrance partition and is embossed to provide the relevant information.

EXAMPLE PLATE



Vehicle Identification Number

In addition the chasis/Vehicle Identification Number is stamped on the main structure in the engine bay.

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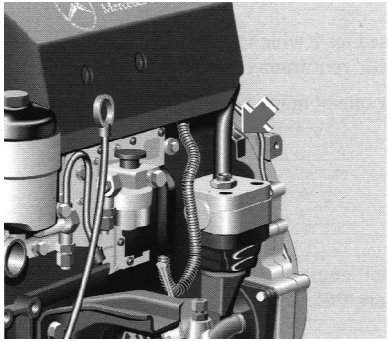
INTRODUCTION

ENGINE TYPE PLATE

Use the information on the engine type plate when requiring service or sourcing parts for your engine.

MERCEDES ENGINE
The type plate is located on the rear left of the engine (arrow), on the joint to the valve case, diagonally above the air compressor.
1: Engine type reference. 2: Engine number.

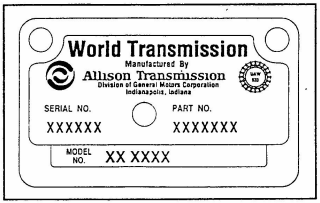


example type plate

TRANSMISSION DATA PLATE - ALLISON

The data plate is to be found on the lefthand side of gearbox at the output shaft end viewed from the front of the vehicle.

Use the information on the data plate when discussing service or sourcing parts for your gearbox.



STEERING BOX DATA PLATE
Steering box data plate is to be found on the steering box body just below the input shaft end cover.

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INTRODUCTION

FRONT AXLE DATA PLATE

The front axle data plate can be found on the left side of the axle beam facing towards the rear of the vehicle.
Use the information on the data plate when discussing service or sourcing parts for the axle.

Front axle data plate

REAR AXLE DATA PLATE

The rear axle data plate can be found on the underside of the diff casing.
Use the information on the data plate when discussing service or sourcing parts for the axle.

Rear axle data plate

CUSTOMER HELPLINE

OPERATION

1. In the event of a vehicle warranty defect occurrence, the operator should contact **OPTARE PRODUCT SUPPORT** by telephoning **08712 301324**, between the hours of 8am & 5pm Mon - Fri.

2. The product support operator will obtain all relevant details including:
   a) Operators name & contact Tel No.
   b) Vehicle identification number (VIN).
   c) Registration number
   d) Mileage
   e) Vehicle location
   F) Nature of fault

3. Necessary arrangements will be made to rectify the fault, Optare agents will not attempt to repair unattended vehicles unless previously advised.
   VOR occurrences will be attended to the next working day (depending on parts availability).

4. Optare will invoice an operator for any job which is subsequently found not to be covered by the vehicle warranty, (an additional administration charge will be levied).

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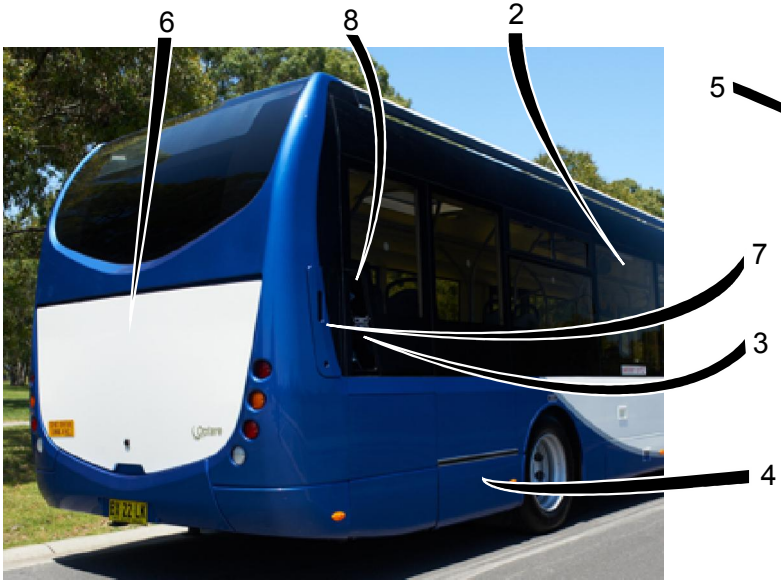
INTRODUCTION

VEHICLE EXTERNAL LAYOUT

1. Entrance door open control
2. Emergency escape
3. Fuel filler
4. Battery access cover
5. Towing eye (1" B.S.F. Female thread)
6. Engine access
7. Emergency engine stop
8. Adblue filler (Mercedes engined vehicles only)



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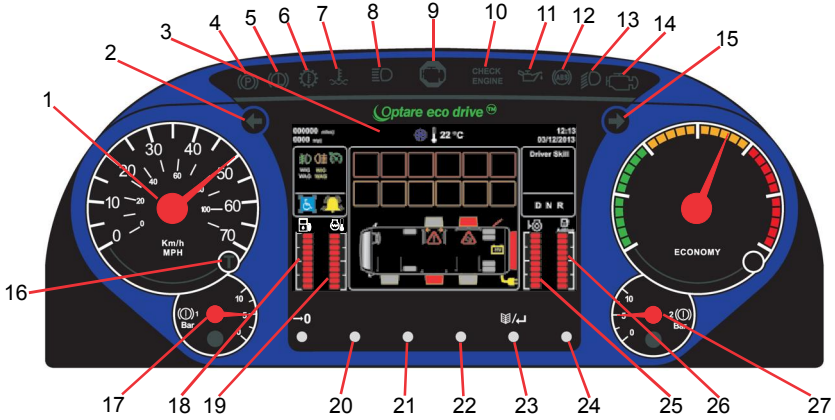
INSTRUMENTS & CONTROLS

INSTRUMENT PANEL



1. Speedometer (MPH / KPH)
2. Indicator Left
3. Trip, Time, Date, Temp, Mileage (TFT)
4. Park Brake On
5. Retarder On
6. Gearbox Oil Temperature High
7. Coolant Temperature High
8. High Beam On
9. Engine Fault Warning (Red)
10. Engine Fault Warning (Amber)
11. Engine Oil Pressure Low
12. ABS System Fault
13. Dip Beam On
14. Emissions Fault
15. Indicator Right
16. Tachograph Warning
17. Front Brake Circuit Pressure
18. Engine Coolant Temperature Gauge (TFT)
19. Fuel Gauge (TFT)
20. Not Populated
21. Not Populated
22. Not Populated
23. Switch between CCTV view / TFT display
24. Not Populated
25. Engine Oil Level / Pressure Gauge
26. Adblue Gauge (TFT)
27. Rear Brake Circuit Air Pressure

(TFT) = shown on central TFT display

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INSTRUMENTS & CONTROLS

WARNING / INFORMATION LIGHTS

The warning / function lights on the Optare vehicle consist of four colours, RED, AMBER, BLUE and GREEN. The colour of the light indicates the level of response required based on the type of warning indicated:

RED - WARNING LIGHTS - Stop immediately it is safe to do so, do not use the vehicle until the fault has been rectified and the warning light extinguishes normally.

AMBER
BLUE
GREEN - FUNCTION LIGHTS - Illuminates when a function is operating normally, however, if the function is switched off and the light remains on (steady or flashing), then attention is required at the earliest opportunity. The vehicle can be operated normally with this light illuminated.

PARK BRAKE (RED)

Illuminates when the park brake is on.

HIGH BEAM (BLUE)

Illuminates when the HIGH beam is switched on or when the headlamp flash is operated.

ABS ACTIVE / FAULT (AMBER)

This lamp will briefly illuminate when the ignition is switched on and will extinguish after the ABS self check has found no system faults.

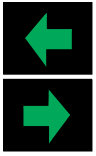
ANTI SLIP REDUCTION (RED)

(When specified)

Illuminates when the ASR system is active, eg, eliminating wheel spin.

HEADLAMP (GREEN)

Illuminates when the HEADLAMPS are switched on in the dipped beam position.



DIRECTIONAL INDICATORS left / right (GREEN)

Flashes when L/H or R/H indicators are switched on.

TACHOGRAPH WARNING (RED)

Illuminates when a fault is detected with the tachograph communication system.

LOW BRAKE CIRCUIT AIR PRESSURE (RED)

Illuminates when low air pressure is detected in the braking circuit.

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INSTRUMENTS & CONTROLS

WARNING / INFORMATION LIGHTS

WHEELCHAIR PASSENGER BELL

State - Pressed

State - latched (not reset)

Illuminates when the wheelchair station bell is activated, lamp is extinguished when the entrance doors are opened.

SALOON BELL

State - Pressed

State - latched (not reset)

Illuminates when the saloon bell has been activated, extinguishes when the entrance doors are opened.

BRAKE PAD WEAR LIMIT (AMBER)

Illuminates when a front or rear brake pad has reached it's minimum wear thickness.

If the light illuminates while driving, stop immediately it is safe to do so, have the brake pads checked / replaced as necessary.

BRAKE LIGHT FAULT (AMBER)

Illuminates when there is a brake light fault. If the lamp illuminate whilst driving, have the brake lights checked at the earliest opportunity.

Illuminates when water is detected in the fuel filter. If the lamp illuminate whilst driving, have the fuel system checked at the earliest opportunity.

WINDSCREEN WASH LOW (AMBER)

Illuminates when the windscreen washer fluid level is low.

If lamp illuminates, have the windscreen washer bottle replenished as soon as possible.

EMERGENCY ESCAPE HAMMER (RED)

Illuminates when the emergency escape hammer is removed from it's holster.

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INSTRUMENTS & CONTROLS

WARNING / INFORMATION LIGHTS

REAR ENGINE DOOR OPEN (RED)

Illuminates when the rear engine door is opened.
If lamp illuminates while driving, stop immediately it is safe to do so.

COMMUNICATIONS FAULT (RED)

Flashes quickly and sounds the warning buzzer when the vehicle develops an J1939 communications failure.
If light illuminates whilst driving, contact your nearest Optare dealer.

KNEELING SUSPENSION (RED)

Illuminates when the kneeling suspension switch is activated, the lamp extinguishes when the vehicle is raised to normal ride height.

AIR SUSPENSION PRESSURE (AMBER)

Lamp illuminates when low air pressure is detected in the suspension circuit.

VEHICLE LOWER (RED)

Illuminates when the vehicle lower switch is activated, the lamp extinguishes when the vehicle is returned to normal ride height.

BATTERY GUARD (AMBER)

The battery guard system shuts down all electrical systems if the battery voltage falls below 23 Volts.
Battery guard is disabled when the engine is running.
Warning light illuminates 30 sec's before system shutdown.

EMERGENCY DOOR OPEN (RED)

Illuminates when a door is opened.

If the lamp illuminates while driving stop immediately it is safe to do so.

EMERGENCY WINDOW OPEN (RED)

Illuminates when an emergency window is opened.

If the lamp illuminates while driving stop immediately it is safe to do so.

AIR FILTER RESTRICTED (AMBER)

Acts as a warning light to indicate the engine air filter has become blocked. If lamp illuminates whilst the engine is running, have the engine air intake system checked immediately it is safe to do so.

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INSTRUMENTS & CONTROLS

WARNING / INFORMATION LIGHTS

COMMUNICATIONS FAULT (AMBER)

Flashes quickly and sounds the warning buzzer when the vehicle develops an J1939 communications failure.
If light illuminates whilst driving, contact your nearest Optare dealer.

LOW AIR PRESSURE (RED)

Lamp warns of low air pressure on the front, rear or park brake circuits.
If the light illuminates while driving, stop immediately it is safe to do so.

FERRY LIFT (RED)

Illuminates when the ferry lift switch is activated, the lamp extinguishes when the vehicle is returned to normal ride height.

ENGINE IDLE SHUTDOWN (AMBER)

If the vehicle is left at idle with a gear selected, after a pre-determined period of time (usually 7 mins), the transmission temperature warning light will flash and if ignored the engine will shut down.
Selecting neutral on the gearshift is necessary before a drive gear can then be selected.

CHECK TRANS (AMBER)

Illuminates when the transmission develops a fault
If the light illuminates while driving, immediately have the vehicle returned for service.
The drive function of the vehicle will not be disabled.

RANGE INHIBIT (GREEN)

Illuminates when gear selection is attempted but conditions for gear selection are not met e.g. Engine speed too high, foot brake not pressed etc.

OVER TEMP (RED)

Illuminates when any of the transmission components has reached a thermal limit. If lamp illuminates whilst driving, stop immediately it is safe to do so and allow the transmission to cool. Once the transmission has cooled, the warning light will extinguish allowing normal operation of the vehicle.

LOW TRANSMISSION OIL LEVEL (AMBER)

Illuminates when the transmission oil level is low.
If the light illuminates while driving, immediately have the vehicle returned for service.

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INSTRUMENTS & CONTROLS

WARNING / INFORMATION LIGHTS

LOW COOLANT LEVEL (AMBER)

Illuminates when the engine coolant level is too low.
If the lamp illuminates while driving stop immediately it is safe to do so.
After allowing the engine to cool down, top up the coolant before continuing the journey.

LOW FUEL LEVEL (AMBER)

Illuminates when the fuel level in the tank is low.
10% fuel remaining - lamp illuminates constant.
5% fuel remaining - lamp flashes.

REAGENT WARNING LIGHT (AMBER)

See pages 19,20, & 21.

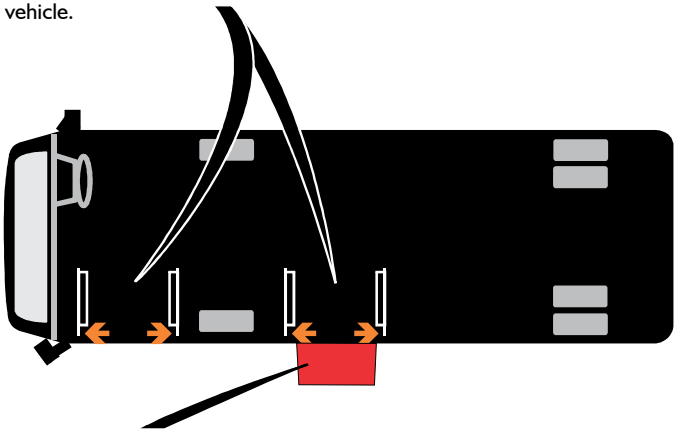
LOW BATTERY CHARGE FROM ENGINE ALTERNATOR (RED)

Illuminates when the ignition switch is turned on. If the lamp does not extinguish when the engine is running, the fault must be identified and rectified.

ENTRANCE / EXIT DOOR (WHITE / RED)

Illuminates WHITE when door is open.
Illuminates RED when door develops a fault or operated via the emergency controls.
Warning function is reset when drivers control is operated.

Position of symbol within plan view outline, indicates location of door on vehicle.



ENTRANCE DOOR RAMP (WHITE / RED)

Illuminates WHITE when ramp is deployed.
Illuminates RED when ramp develops a fault, or if deployment is attempted under unsatisfactory conditions e.g. Entrance door closed, vehicle moving etc.
Warning function is reset when drivers control is operated.

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INSTRUMENTS & CONTROLS

WARNING / INFORMATION LIGHTS

AIR FILTER RESTRICTED (RED)

Acts as a warning light to indicate the engine air filter has become blocked.
If lamp illuminates whilst the engine is running, have the engine air intake system checked immediately it is safe to do so.

HALT BRAKE (RED)

(When fitted)

Lamp illuminates when the halt brake system is active.
The halt brake system applies the service brakes when:-
The vehicle is knelt.
The entrance ramp is deployed.
Neutral gear is selected.

FIRE SUPPRESSION ACTIVATED (RED)

Illuminates when the fire suppression system is activated.
If lamp illuminates whilst driving, stop immediately it is safe to do so and follow your company emergency procedures.

FUEL LEVEL

Number of bars reduce as the fuel tank is depleted.

ENGINE COOLANT TEMPERATURE

Number of bars increases as the engine coolant temperature increases.
Bars turn ‘RED’ when engine coolant temperature is too hot.

ENGINE OIL LEVEL / PRESSURE

Ignition ‘ON’ only -
The colour of the bars indicate the oil level status:
WHITE bars - Oil level within correct range.
RED bars - Oil level out of range.
High number of bars indicate oil level is too high.
Low number of bars indicate oil level is too low.

Engine running -
Displays oil pressure gauge:
WHITE bars indicate correct oil pressure.
RED bars indicate incorrect oil pressure.

ADBLUE LEVEL

Number of bars reduces as the adblue tank is depleted.

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INSTRUMENTS & CONTROLS

WARNING / INFORMATION LIGHTS

RETARDER ACTIVE (RED, AMBER, BLUE)

RED, Stage 1 failure - This indicates a fault with the retarder ECS. The vehicle should be stopped immediately it is safe to do so and have the problem rectified (a **5 Min** time period has been allowed to safely stop and isolate the vehicle).

AMBER, Stage 2 failure - This condition is activated if the vehicle is kept in "vehicle moving phase" for more than **5 Min's**, **In this condition throttle control will be lost.**

BLUE, Foot brake fault - This lamp indicates a brake pedal fault.

BATTERY GUARD (AMBER)

The battery guard system shuts down all electrical systems if the battery voltage falls below 23 Volts.
Battery guard is disabled when the engine is running.
Warning light illuminates 30 sec's before system shutdown.

WAIT TO START (AMBER)

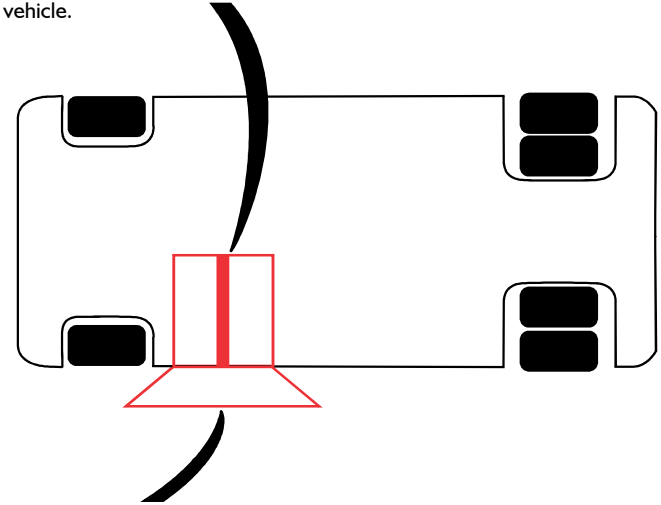
(Cummins only)

Wait to start lamp illuminates after ignition is switched on, the lamp stays on while the engine ECU performs it's system checks.
The engine cannot be started until this lamp is extinguished.
The lamp will extinguish after all the ECU system checks are satisfied.

ENTRANCE / EXIT DOOR (WHITE / RED)

Illuminates WHITE when door is open.
Illuminates RED when door develops a fault.

Position of symbol within plan view outline, indicates location of door on vehicle.



ENTRANCE DOOR RAMP (WHITE / RED)

Illuminates WHITE when ramp is deployed.
Illuminates RED when ramp develops a fault.

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INSTRUMENTS & CONTROLS

WARNING / INFORMATION LIGHTS

ADBLUE WARNING LIGHTS

ADBLUE QUALITY REDUCED (AMBER)

Inducement light (solid). Illuminates after detection of incorrect adblue quality.

ADBLUE QUALITY REDUCED (10 Hrs of operation) (AMBER)

Inducement light (solid), Inducement Limiter (solid). Max engine torque is limited to 75% of peak torque.

ADBLUE QUALITY REDUCED (20 Hrs of operation) (AMBER)

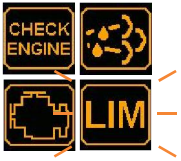
Inducement light (solid), Inducement Limiter (flashing 1Hz). Vehicle speed is limited to 20 Km/h.

LOW ADBLUE CONSUMPTION (AMBER)

Inducement light (solid), AWL light (solid), MIL light (solid). Illuminates when detecting low Adblue consumption. Check Adblue system.

LOW ADBLUE CONSUMPTION (10 Hrs of operation) (AMBER)

Inducement light (solid), Inducement limiter (solid), AWL light (solid), MIL light (solid). Illuminates when detecting low Adblue consumption for 10Hrs of engine operation. Max engine torque is limited to 75% of peak torque.



LOW ADBLUE CONSUMPTION (20 Hrs of operation) (AMBER)

Inducement light (solid), Inducement limiter (flashing 1Hz), AWL light (solid), MIL light (solid). Illuminates when detecting low Adblue consumption for 20Hrs of engine operation. Vehicle speed is limited to 20Km/h

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INSTRUMENTS & CONTROLS

ADBLUE WARNING LIGHTS

INTERRUPTION OF ADBLUE DOSING (AMBER)

Inducement light (solid). Illuminates after interruption of adblue dosing.

INTERRUPTION OF ADBLUE DOSING (10 Hrs of operation) (AMBER)

Inducement light (solid), Inducement Limiter (solid). Max engine torque is limited to 75% of peak torque.

INTERRUPTION OF ADBLUE DOSING (20 Hrs of operation) (AMBER)

Inducement light (solid), Inducement Limiter (flashing 1Hz). Vehicle speed is limited to 20 Km/h.

ADBLUE MONITORING SYSTEM COMPONENT FAILURE (AMBER)

Inducement light (solid).
Illuminates when detecting monitoring component failure.
Check Adblue system.

ADBLUE MONITORING SYSTEM COMPONENT FAILURE (10 Hrs of operation) (AMBER)

Inducement light (solid), Inducement limiter (solid). Illuminates when detecting monitoring component failure for 10Hrs of engine operation.
Max engine torque is limited to 75% of peak torque.

ADBLUE MONITORING SYSTEM COMPONENT FAILURE (20 Hrs of operation) (AMBER)

Inducement light (solid), Inducement limiter (flashing 1Hz). Illuminates when detecting monitoring component failure for 20Hrs of engine operation.
Vehicle speed is limited to 20Km/h

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INSTRUMENTS & CONTROLS

AUDIBLE WARNING

The driver should familiarize himself with the sound of the warning buzzer.

IF THE BUZZER SOUNDS WHILE DRIVING, STOP IMMEDIATELY IT IS SAFE TO DO SO.

THE BUZZER IS ACTIVATED BY THE FOLLOWING:-

1. Emergency door lock handle activated.
2. Low air pressure in braking circuits.
3. Low coolant level.
4. Low engine oil pressure.
5. Engine over heat.
7. Low battery charge (alternator failure).
8. Fire suppression system active (optional).
9. Ramp deployment (powered ramp) or (manual ramp when requested).
10. Vehicle kneeling.

INSTRUMENT PANEL SWITCHES

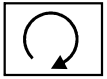
BATTERY MASTER

Press once - Switches on the vehicles electrical power.
Press again - Turns off the vehicles electrical power.

IGNITION SWITCH

Press once - Switches on the systems.
Press again - Turns off the systems

START SWITCH



Depress to enable drive.

HAZARD WARNING LIGHTS

Press once - Activates the hazard warning lights.
Press again - Turns off the hazard warning lights.

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INSTRUMENTS & CONTROLS

SIDE CONSOLE SWITCHES

DOOR OPEN/CLOSE

Press once - Doors open.
Press again - Doors close.

KNEELING SUSPENSION

Press once - Vehicle lowers.
Press again - Vehicle rises.

SIDE LIGHTS

Press once - Side lights illuminate.
Press again - Side lights extinguish.

HEADLAMPS

Press once - Headlamps illuminate to full power.
Press again - Headlamps extinguish or dims to 20% of full power (optional configuration through Actia setup program).

REAR FOG LAMPS

Press once - fog lamps illuminate.
Press again - fog lamps extinguish.
Fog lamps can only be illuminated while headlamps are switched on.

SALOON LAMPS - L/H, R/H

Press once - Saloon lamps illuminate.
Press again - Saloon lamps extinguish.

CAB LIGHT

Press once - Cab lamp illuminates.
Press again - Cab lamp extinguishes.

DEMISTER OPERATION

Press once - for slow speed demister blowers.
Press again - for fast speed demister blowers.
Press again - to turn off demister blowers.

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INSTRUMENTS & CONTROLS

SIDE CONSOLE SWITCHES

SALOON HEATER BLOWERS

Press once - to start saloon heater blowers.
Press again - to stop saloon heater blowers.

INTERMITTENT REVERSE BLEEPER (MUTE)

Press once - to turn reverse bleeper off.
Press again - to turn reverse bleeper on.
Switch can only be operated when reverse gear is selected.

AUXILIARY HEATER

Press once - to turn
Press again - to turn

WIG / WAG LIGHTS

Press once - to set lights to auto (flash when entrance doors are open).
Press again - to set lights flashing constantly.
Press again - to turn off the lights.

SPEEDOMETER / ODOMETER

The standard speedometer /odometer indicates road speed in miles per hour and kilometers per hour.

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INSTRUMENTS & CONTROLS

STEERING COLUMN MOUNTED CONTROLS

Operation of Left Hand Switch

The upper left hand steering column switch operates the directional indicators and horn.

Push the lever forwards to operate the directional indicators on the right. Pull the lever rearward to operate the directional indicators on the left. The lever will return to neutral when the steering wheel is centred.
For brief operation of directional indicators (lane change), hold the lever in the appropriate direction against the spring; the lever will return to neutral when released.
Press in the button at the end of the lever to sound the horn (button has a spring return).

Operation of Lower Left Hand Switch

The lower left hand steering column switch operates the headlamps. (Note the headlamp master switch is on the main switch panel).

Push the lever forward to operate low beam. Pull the lever rearward (to neutral position of upper switch) to operate high beam.

Depress the button beneath the end of the lever to flash the headlamps - high beam from low or low beam from off, (button has a spring return).

Operation of Right Hand Switch

The right hand steering column switch operates the windshield wipers and washers.

The lever has four positions thus:
Fully forward - wipers off
1st position rearwards - intermittent wipe
2nd position rearwards - slow wipe
Fully rearwards - fast wipe

Depress the button beneath the end of the lever to operate the washer jets (button has a spring return).

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INSTRUMENTS & CONTROLS

DRIVERS SEAT

DO NOT adjust the seat when the vehicle is in motion.

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INSTRUMENTS AND CONTROLS

PARKING BRAKE

Park brake mode is shown by an instrument panel indicator.

The park brake control releases air from the park brake pneumatic control circuit, allowing the spring brake actuators to apply the rear brakes. To release, lift the locking sleeve and move the park brake lever to the 'OFF' position.

To apply, move the park brake lever to the 'ON' position, the warning lamp on the driver's instrument panel will illuminate.

EMERGENCY BRAKING

The park brake can be used in an emergency, for example if the footbrake system fails, move the park brake lever slowly towards the 'ON' position. Braking is proportional to movement of the lever.

DO NOT USE THE PARK BRAKE FOR NORMAL BRAKING.

GEAR SELECTOR

Note: Before a gear can be selected from neutral, the park brake and the foot brake must be applied.
The function of each button is as follows:
Select REVERSE gear by pressing "R".

Select NEUTRAL by pressing "N".
Allison:- Note the raised edge around the "N" button so the driver can orient his/her hand to the push buttons by touch, without looking at the display. It is not necessary to press this button prior to starting the vehicle.

Select DRIVE range by pressing "D".
Allison:- The number 1 will appear on the display, this will change to indicate the current gear as the vehicle shifts up through the ranges.

Allison:- The UPSHIFT & DOWNSHIFT (arrow) buttons are used to shift up or down the gear range one at a time. One press changes the gear selected by one gear, if the button is held continuously, the gear selected continues to change up or down until the button is released or the highest or lowest gear is selected.

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INSTRUMENTS & CONTROLS

FOOTBRAKE

For all normal braking, use the footbrake gently. To assist in slowing down on long or steep gradients, select lower gears.

RETARDER

When the retarder is in operation the warning lamp on the instrument panel will illuminate.

The retarder is hydraulicly operated from inside the gearbox and is activated by depressing the footbrake pedal. This function is only enabled above 3 kmph

STEERING

The steering system is hydraulically power assisted from a hydraulic pump mounted on the engine.

The steering mechanism is designed in such a way that in the event of any loss of hydraulic pressure, it is still possible to steer the vehicle, although extra effort will be required.

The wheels must not be turned when the vehicle is stationary as this can result in serious damage to the steering mechanism.

KNEELING SUSPENSION

The vehicle front air bags will deflate to lower step height. Depress control switch to lower when handbrake is on.
Raise suspension by again pressing the suspension control switch.

NOTE:
Suspension cannot be lowered when the entrance doors are closed.
Suspension will automatically raise when the handbrake is released.

NB: A software program is available for operation when doors are open - (special Request)

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INSTRUMENTS & CONTROLS

SIDE CONSOLE PANEL SWITCHES

For key to side console panel switches, see pages 19/20.

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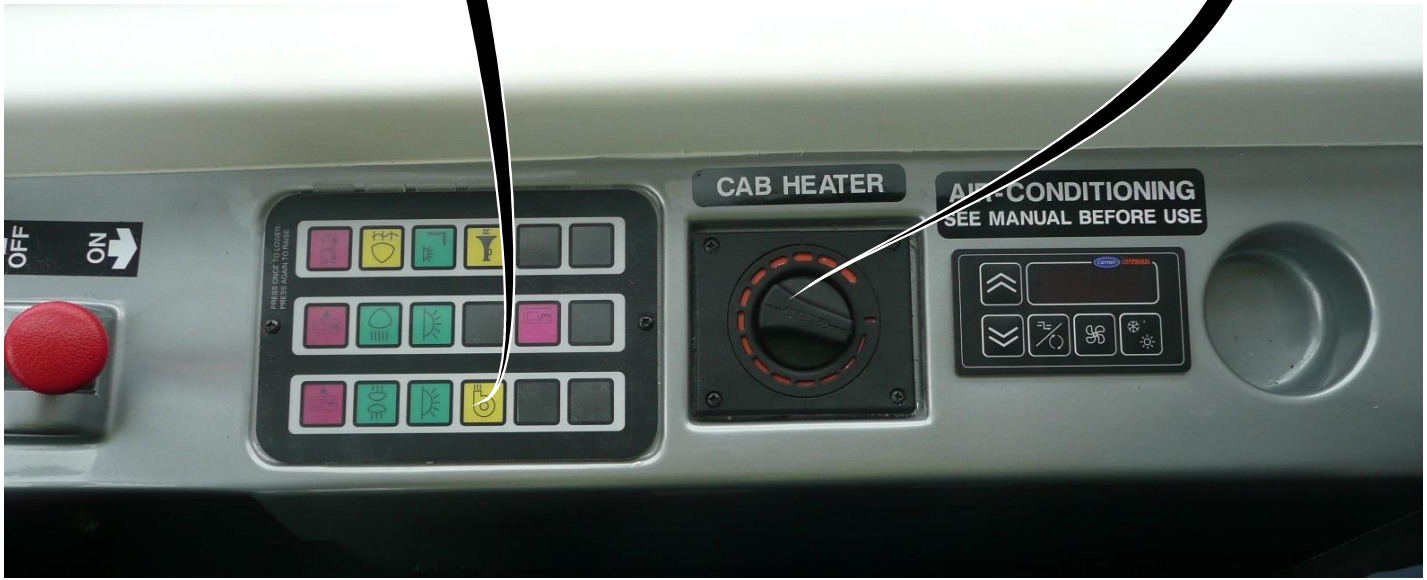
INSTRUMENTS & CONTROLS

WINDSCREEN DEMISTER

Demisting is achieved by a water heat exchanger unit with a fan blower being controlled by a switch located on the drivers console switch bank. For operation details see page 19.

Demisting temperature is controlled by a rotary knob situated next to the drivers console switch bank as shown.



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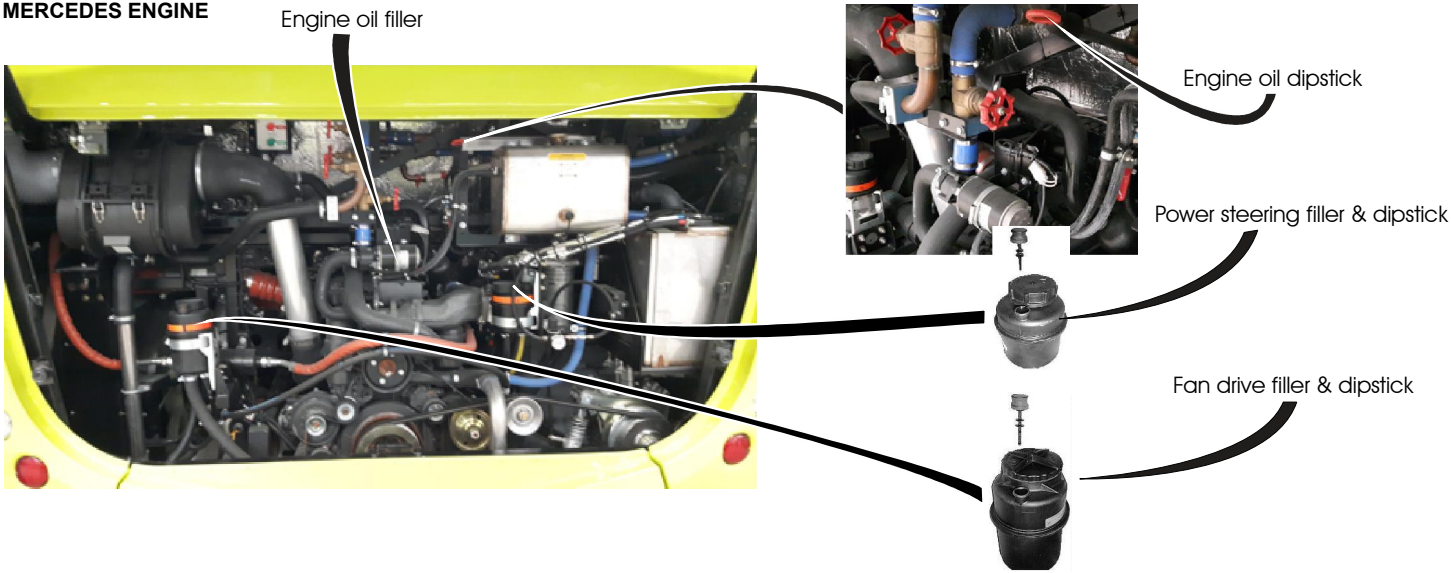
ROUTINE MAINTENANCE

MERCEDES ENGINE



DAILY CHECKS BEFORE USE

IF DURING THE CHECKS ANY SAFETY FAULTS ARE FOUND, ENSURE THAT THEY ARE RECTIFIED BEFORE PLACING THE VEHICLE INTO SERVICE.

ENSURE THAT THE VEHICLE IS ON LEVEL GROUND BEFORE CHECKING OR FILLING FLUIDS.

For recommended lubricants see Technical Data Section.

Ensure that no oil is allowed to contaminate the 'V' belts or drive pulleys.

ENGINE OIL

Check the engine oil level using the gauge on the instrument panel. Top up as required. (see Page 14).

ALWAYS USE THE SAME GRADE OIL AS THAT ALREADY IN THE ENGINE.

STEERING HYDRAULIC FLUID

Check the level at the dipstick and top up as necessary.

FAN DRIVE HYDRAULIC FLUID

Check the level at the dipstick and top up as necessary.

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ROUTINE MAINTENANCE

HYDRAULIC FLUID IS TOXIC AND MUST NOT BE SWALLOWED.

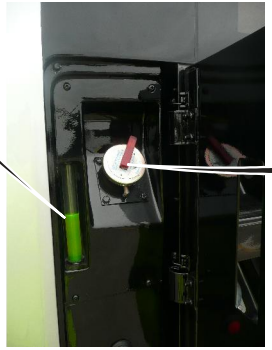
It is important that cleanliness is always maintained in hydraulic systems, therefore all fluids must be free from dirt or water contamination. All filler caps should be cleaned before removal and before replacement. It is recommended that paper wipes are used in preference to rags.

Only use hydraulic fluid of the approved specification.

FUEL

Check that sufficient diesel fuel is being carried.

Never fill the fuel tank to the brim of the filler neck, particularly if the vehicle is to be parked after filling. N.B. cold fuel from an under ground fuel storage tank will expand, particularly in hot weather, and can cause loss of fuel through the filler cap.



COOLING SYSTEM

DO NOT REMOVE THE FILLER CAP OR THE PRESSURE RELIEF CAP FROM THE COOLING SYSTEM HEADER TANK WHEN THE ENGINE IS HOT.

The coolant is under pressure and may blow out causing severe scalding.
Check that the level of coolant in the header tank is up to the top mark of the sight gauge.

IMPORTANT. Always ensure that the filler caps and dipsticks are replaced.

REAGENT

Check that sufficient Reagent is being carried.

NOTE:
IT IS AN OFFENCE TO RUN THE VEHICLE WITHOUT REAGENT, ENSURE THE REAGENT LEVEL IS CHECKED REGULARLY.

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ROUTINE MAINTENANCE

ELECTRICAL - EXTERNAL

Clean all lenses.

Check and correct as necessary:
Sidelamps.
Headlamps - Mainbeam.
Headlamps - Dip beam.
Tail lamps.
Stop lamps.
Rear fog lamps.
Rear number plate lamps.
Hazard warning lamps.
Direction indicators - front, side & rear
Marker lamps.

ELECTRICAL - INTERNAL

Check and correct as necessary:
Saloon lamps.
Cab lamp.
Step lamp.
Warning lamps and buzzer operation.
Speedo & Gauge lamps.

WINDSCREEN WIPERS

Check the condition of the wiper blades and replace as necessary.
Check that the wipers function correctly.
IMPORTANT. Do not operate the wipers on a dry windscreen.

MIRRORS

Clean both interior and exterior mirrors. Check and reposition as necessary.

TYRES

Check that all tyres are free from damage and wear and that they are correctly inflated, see Technical Data section.

WARNING. Driving a vehicle on incorrectly inflated tyres effects the safety of the vehicle, leads to premature tyre wear and high fuel consumption. Unbalanced wheel and tyre combinations cause uneven wear. It is important that replacement tyres should be of the same size, type and speed rating as those originally fitted to your vehicle as any variation

WHEELS

Check the condition of the wheel rims, if they are damaged, have them replaced.

WHEEL NUTS

Check the wheel nuts for signs of rust or movement, have any defects rectified before driving the vehicle.

EXHAUST SYSTEM

Check that excessive smoke is not emitted from the exhaust.

Exhaust gases are poisonous; avoid inhaling exhaust gases.

Ensure that the vehicle is either in the open or in a well ventilated area before starting the engine.

DRIVERS SEAT

Check the position of the drivers seat; alter position as necessary before starting the engine.

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SALOON AMENITIES

INTERIOR LIGHTING

Saloon lighting is provided by continuous fluorescent ceiling mounted lamp units.

Operation is by a push button switch located on the drivers console switch panel.

For key to instrument panel switches see pages 18,19&20.

CAB LAMP

Cab lighting is provided by an enclosed ceiling mounted flourescent lamp. Operation is by a push button switch mounted on the drivers instrument panel. The lamp illuminates when:
The side lights are switched on and the entrance doors are open.
The operating switch is pressed. See page 19.

ENTRANCE/EXIT LAMP

Entrance lighting is provided by an enclosed ceiling mouted flourescent lamp. The lamp is operated automatically when the entrance door is opened whilst the side/head lamps are on.

PAVEMENT LAMPS (when specified)

Twin halogen lamps are fitted to the underside of the entrance/exit shelf plate. The lamp is operated automatically when the entrance door is opened whilst the side/head lamps are on.

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ELECTRICAL

FUSE REPLACEMENT

Isolate the vehicle electrical supply and remove the failed fuse.

DO NOT USE ANY METAL OBJECT TO REMOVE A FUSE IT COULD CAUSE A SHORT CIRCUIT.

Ensure the new fuse is of the same rating as the one shown on the optare fuse/relay layout drawing, this is located within the vicinity of the fuse/relay board.

NEVER REPLACE A FUSE WITH ANOTHER OF A HIGHER RATING, THIS COULD CAUSE DAMAGE OR EVEN A FIRE.

FUSES

The vehicles fuses are located behind the rear bulkhead centre panel (photo).
Through the two access doors, undo and remove the four centre panel retaining nuts and lift the panel clear for access to the fuses.

In addition, there are two main fuses located behind the battery access panel below the emergency door on the exterior of the vehicle.

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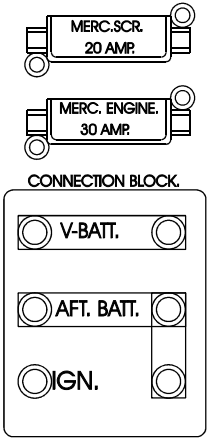
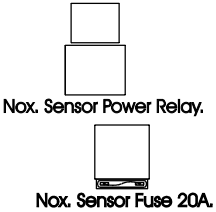
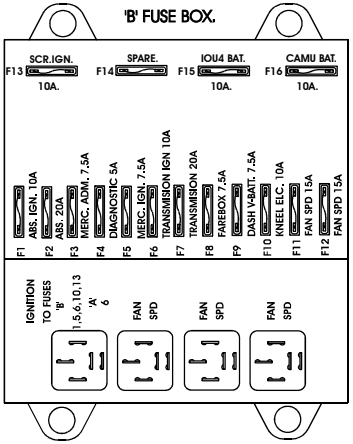
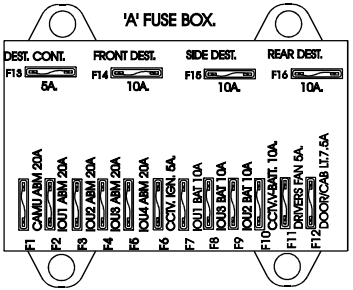
ELECTRICAL

FUSES









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ELECTRICAL

BULBS

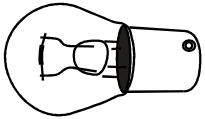
Bulbs must not be touched with bare hands. Any grease on the fingers will cause stains which evaporate, eventually dulling the reflector.

If a bulb is inadvertently stained it may be cleaned using a clean lint-free cloth and alcohol or white spirit.

ALLOW ANY FAILED BULBS TO COOL BEFORE HANDLING.

TAKE CARE OF BROKEN GLASS WHEN RENEWING BULBS.

Some vehicles are fitted with LED Lamps.
The whole lamp must be replace if LEDs have failed.



Headlamp	24V x 70/75W	H4
Front Indicator	24V x 21W	SCC Amber
Side Repeater Lamp	24V x 5W	SCC
Speedometer	24V x 1.2W	Wedge
Saloon Lights	24V x 58W - Fluorescent Tube 1"Dia	
	24V x 30W - Fluorescent Tube 1"Dia	
	24V x 20W - Fluorescent Tube 1"Dia	
Front Destination	24V x 18W - Fluorescent Tube 1"Dia	

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ELECTRICAL

HEAD/SIDELAMPS

Access to the head/sidelamp bulbs is via removal of the headlamp bezel and headlamp units.

FRONT DIRECTION INDICATORS

Undo the two screws and remove the lens for access to the bulb. When refitting the lens, ensure that it is seated and sealed onto the body of the lamp unit.

SIDE REPEATERS

Unscrew and remove the lens/cover to gain access to the bulb.

REAR LAMPS

Each of the rear lamps are individual units for each function, ie:- tail, brake, reverse, direction indicator and rear fog. In each instance undo and remove the four screws holding the unit to the vehicle. Remove the unit. Access to the bulb is via the rear of the unit.

NOTE: The back of the rear lamps are sealed and the lens cannot be removed from the lamp body.

FRONT MARKER LAMPS

Remove the two screws securing the lamp to the vehicle. For access to the bulb, remove the rubber cover at the back of the lamp. When refitting ensure that the lens is seated and sealed to the rubber cover.

REAR HIGH LEVEL LAMPS

For access to the bulb, remove the two securing screws and lift away the lens.

REAR REGISTRATION LAMP

Access to the rear registration lamp bulb is through the right hand access door at the rear of the vehicle saloon. The registration lamp will need to be removed attached to it's mounting bracket and then removed from the bracket before the bulb can be replaced.

INTERIOR SALOON LAMPS

Remove cover by squeezing the sides together and lowering away from light unit. Turn tube through 90° to release from end holders.

ENTRANCE AND CAB LAMPS

Access to the bulb is via removing the four end cover screws and lifting away the lens.

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ELECTRICAL

WINDSCREEN WIPER

Access to the wiper motor and linkage is via removal of the front panel. The front panel is secured by two screws located behind the wiper arm (photo).
Both wiper arms must be removed before the front panel can be detached.

WHEN WORKING IN THE AREA OF THE WINDSCREEN WIPER LINKAGE, ENSURE THAT THE WIPER SYSTEM CANNOT BE OPERATED.

Note:
Do not operate the windscreen wipers on a dry windscreen, this can put excessive strain on the wiper motor and lead to premature failure.

WINDSCREEN WASHERS

Check the level in the windscreen washer bottle and top up as necessary.

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DRIVING INSTRUCTIONS

CONVEYANCE OF PASSENGERS

PRIOR TO THE CONVEYANCE OF PASSENGERS, THE FOLLOWING ITEMS MUST BE CHECKED AND CORRECTED AS NECESSARY.

THE ENTRANCE DOOR AND ALL EMERGENCY EXITS ARE OPERATIONAL FROM THE VEHICLE INTERIOR AND EXTERIOR.

ALL BELL PUSHES ARE IN WORKING ORDER.

ALL INTERIOR AND EXTERIOR ACCESS FLAPS ARE CLOSED AND SECURED.

ENSURE THAT GEARBOX ACCESS TRAP IN THE FLOOR IS SECURED AND THAT ALL ACCESS PANELS (EG FRONT SUSPENSION PIVOT) ARE SECURED IN THEIR CORRECT POSITION.

THE SALOON FLOOR IS CLEAN AND FREE FROM CONTAMINATION WHICH MAY CAUSE INJURY TO PASSENGERS.

THE ENTRANCE AND SALOON STEP EDGINGS ARE SECURE.

SEATS ARE CLEAN AND FREE FROM ANY SHARP OBJECTS OR CONTAMINATION WHICH MAY CAUSE INJURY TO PASSENGERS.

ALL WINDOWS ARE CLEAN.

FIRE EXTINGUISHER CONTENTS

FIRST AID KIT (when specified).

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DRIVING INSTRUCTIONS

STARTING THE ENGINE

Set the gearshift to NEUTRAL.
Ensure that the parking brake is ON.
Engine cover closed
Momentarily press the battery master switch, and all warning lights will illuminate as part of the self test procedure.
The ignition switch will illuminate when all conditions of the self test procedure are met
Momentarily press the ignition button, the start switch will illuminate.

THEN:-

Press and hold the start button.
When the engine starts , release the button.

DO NOT OPERATE THE STARTER FOR MORE THAN 20 SECONDS.

NOTE: ENGINE WILL NOT START FROM CAB IF ENGINE DOOR IS OPEN.

STOPPING THE ENGINE

Momentarily press the ignition button, the engine will stop.
Momentarily press the battery master, all warning lights will extinguish.

BEFORE DRIVING

ENSURE THAT THE AIR PRESSURE BUILDS UP, UNTIL THE LOW AIR PRESSURE WARNING LAMP EXTINGUISHES AND THE WARNING BUZZER STOPS SOUNDING.

ENSURE THAT THE LOW BATTERY CHARGE AND LOW OIL PRESSURE WARNING LAMPS EXTINGUISH WHEN THE ENGINE IS IDLING.

GEAR SELECTION

Before gear selection is possible, the following conditions must be met:-

Parking brake must be on.
Foot brake must be depressed.
Entrance ramp must be in the stowed position.

GEAR GUARD

If the vehicle is left at idle with a gear selected, after a pre-determined period of time (usually 7 mins).
The transmission temperature warning light will flash and if ignored the engine will shut down.
Selecting neutral on the gearshift is necessary before a drive gear can then be selected.

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DRIVING INSTRUCTIONS

DRIVING

ALWAYS OBSERVE THE LOW PRESSURE WARNING LAMP AND LISTEN FOR THE WARNING BUZZER. IF LOW AIR PRESSURE IS INDICATED WHEN THE VEHICLE IS IN MOTION STOP IMMEDIATELY IT IS SAFE TO DO SO AND OBSERVE THE AIR GAUGES.

If a failure of the parking brake system is indicated - NO DRIVING IS PERMISSIBLE

ALWAYS OBSERVE THE ENGINE TEMPERATURE WARNING LAMP. DO NOT RUN AN OVERHEATING ENGINE.

ALWAYS OBSERVE THE LOW OIL PRESSURE WARNING LAMP. DO NOT DRIVE WITH LOW OIL PRESSURE.

NEVER COAST OR RUN DOWNHILL WITH A STATIONARY ENGINE. With the vehicle in this condition many units will not function.

WHILST DRIVING, OBSERVE THE STEERING FOR EXCESSIVE PLAY OR VIBRATION. ENSURE ANY DEFECTS ARE RECTIFIED IMMEDIATELY.

USE OF BRAKES

Erratic driving results in increased brake wear.

Good drivers have a feel for braking, reducing brake lining wear. Heavy braking should only occur where there is real danger.

CARE SHOULD BE TAKEN IN EXTREME WET/ICY CONDITIONS.

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EMERGENCY INSTRUCTIONS

HAZARD WARNING LAMPS

Hazard warning lamps are controlled by a push switch on the drivers instrument panel. When activated all direction indicators flash simultaneously

The switch flashes to show when the hazard warning lamps are in operation.

Hazard warning lamp switch

FIRE EXTINGUISHER

The driver (and crew) should ensure that they are familiar with the location and method of operation of the fire extinguisher. The extinguisher must be replaced with a fully charged unit after being discharged irrespective of contents capacity.

FIRE EXTINGUISHERS MUST BE CHECKED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.

IN THE EVENT OF A FIRE

OPEN DOORS AND EVACUATE THE VEHICLE.

Note: The open button protrudes further than the close button to enable easier locating in the event of an emergency.

STOP ENGINE.

CALL THE FIRE BRIGADE BY RADIO OR TELEPHONE.

TURN OFF THE ELECTRICAL ISOLATION SWITCH, IF SAFE TO DO SO.

ATTEMPT TO EXTINGUISH THE FIRE IF SAFE TO DO SO.

FIRST AID BOX (when specified)

The driver (and crew) should ensure that they are familiar with the location and contents of the first aid box.

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EMERGENCY INSTRUCTIONS

ENTRANCE/EXIT DOORS

DRIVER CONTROL

EXTERIOR OPEN CONTROL

INTERIOR OPEN/CLOSE CONTROL

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EMERGENCY INSTRUCTIONS

EMERGENCY EXITS

An emergency door is fitted at the rear Right Hand Side of the vehicle.
When specified, the door can be made to lock from the outside of the vehicle.

⚠ Ensure that the door is not locked during operation of the vehicle.

When the door has been opened , the 'DOOR OPEN' warning lamp on the drivers instrument panel illuminates and a warning buzzer sounds.

The rear window serves as a Break Glass Emergency Exit.

A Break Glass Hammer is fitted in a holster which is situated on the interior above the rear window.

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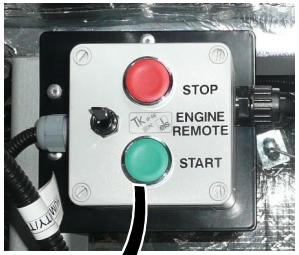
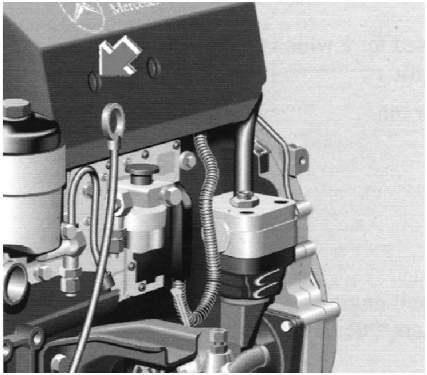
EMERGENCY INSTRUCTIONS

EMERGENCY ENGINE STOP

An emergency engine stop button can be found either in the engine bay or behind the coolant filler flap.



The emergency engine stop button on Mercedes powered vehicles can be found on the engine cover (arrowed)



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EMERGENCY INSTRUCTIONS

BATTERY ISOLATOR

The batteries are isolated by means of an adjacent relay. Operated by the master switch on the drivers instrument panel.

In the event of an accident, fire or an electrical fault, the electrical system should be isolated, if it is safe to do so. It is recommended that the electrical system is isolated while the vehicle is garaged or during prolonged periods of inactivity e.g. overnight by removing the batteries.

NOTE: ISOLATING THE VEHICLE USING THE SWITCH ON THE DRIVERS INSTRUMENT PANEL STILL LEAVES SOME CIRCUITS WITH A LIVE FEED.

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EMERGENCY INSTRUCTIONS

VEHICLE RECOVERY

A female 'c' coupling is fitted behind the front bumper. This enables the vehicle's pneumatic system to be supplied with air from the recovery vehicle.

THE VEHICLE MUST NOT BE LIFTED USING THE TOWING EYE. THE TOWING EYE BOSS IS 1" B.S.F. FEMALE THREAD, LOCATED BEHIND THE FRONT PANEL (PHOTO).

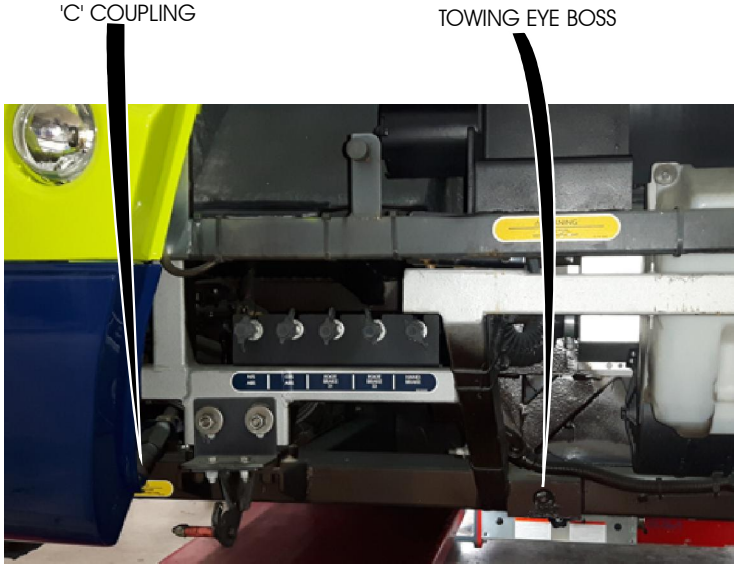
TO PREVENT DAMAGE TO THE GEARBOX, THE PROPSHAFT MUST BE REMOVED, IRRESPECTIVE OF THE TOWING DISTANCE INVOLVED.

OBSERVE THE LEGAL REGULATIONS OF THE COUNTRY IN WHICH THE VEHICLE IS BEING TOWED.

In the event of an air failure resulting in the application of the spring brakes, the brakes can be released, either by applying an airline to the I.S.O. valve located below the handbrake valve, or by winding out the spring retaining bolts on the spring brake actuators. Access to the spring brake actuators is from the underside of the vehicle.

NOTE: THE SPRING BRAKE UNITS MUST BE RETURNED TO THE OPERATIONAL CONDITION. **IMPORTANT** - REFER TO SERVICE INFORMATION.

NOTE: WHEN USING THE 'C' COUPLING TO SUPPLY THE VEHICLE WITH AIR, **DO NOT EXCEED 8 BAR MAX PRESSURE**.



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EMERGENCY INSTRUCTIONS

JACKING POINTS

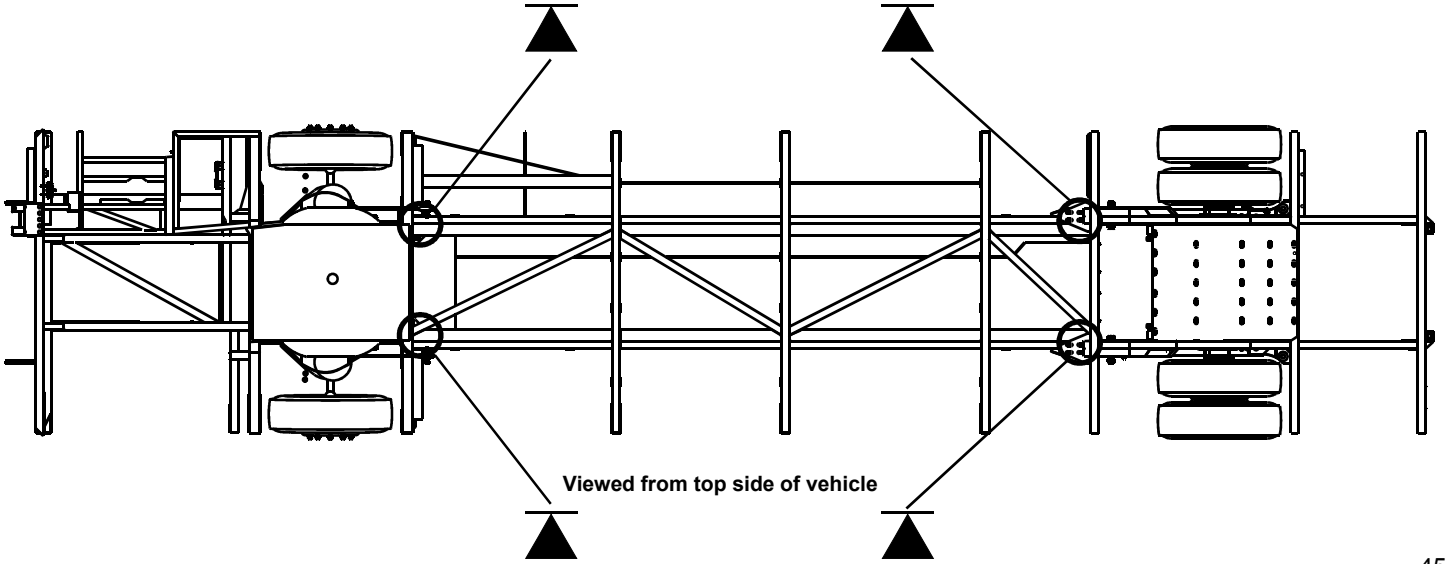
BEFORE JACKING IT IS ESSENTIAL THAT THE VEHICLE IS ON A LEVEL SURFACE WITH THE HANDBRAKE ON.
WHERE POSSIBLE CHOCK THE WHEELS.

JACKING POINTS ARE FOR LIFTING ONLY. IF WORK IS TO BE CARRIED OUT ON THE VEHICLE IT MUST BE SUITABLY SUPPORTED OTHER THAN BY JACKS (eg AXLE STANDS).

ENSURE PARK BRAKE IS ON AND USE CHOCKS AT WHEELS REMAINING IN CONTACT WITH THE GROUND.

THE VEHICLE MUST NOT BE JACKED WHILST LADEN.

ENSURE THAT THE JACK IS LOCATED CORRECTLY IN THE RECESS IN THE JACKING POINT, WHERE PROVIDED.



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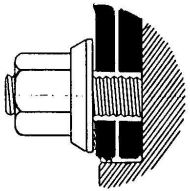
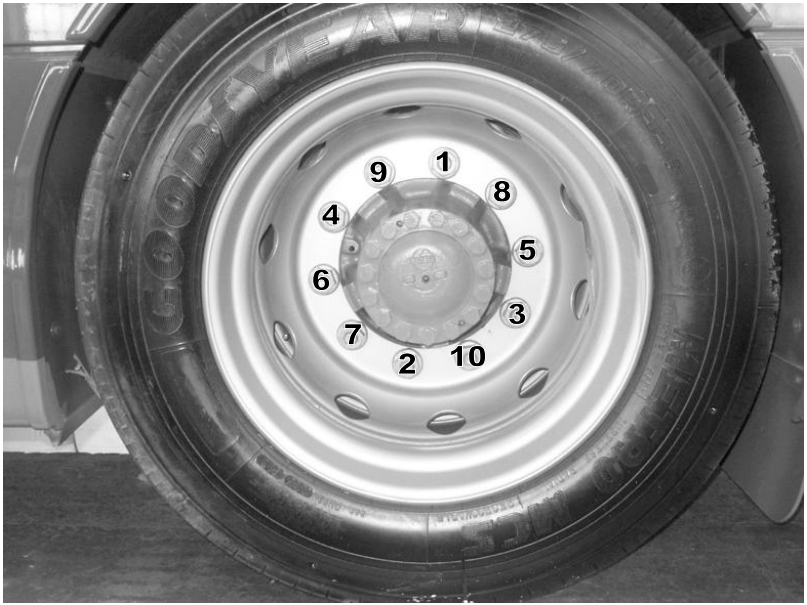
EMERGENCY INSTRUCTIONS

WHEELS

WHEN FITTING A WHEEL, ENSURE THAT THE WHEEL NUTS ARE CORRECTLY SEATED AND TIGHTEN THE NUTS IN THE SEQUENCE SHOWN. TIGHTENING TORQUE 575Nm. RETIGHTEN THE NUTS FOLLOWING A WHEEL CHANGE WITHIN 24 HOURS.

AFTER CHANGING A WHEEL, CHECK AND CORRECT THE TYRE PRESSURE BEFORE PROCEEDING WITH THE JOURNEY





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GENERAL MAINTENANCE

IF DURING THE CHECKS, ANY SAFETY FAULTS ARE FOUND, ENSURE THAT THEY ARE RECTIFIED BEFORE PUTTING THE VEHICLE INTO SERVICE.

ENSURE THAT THE VEHICLE IS ON LEVEL GROUND BEFORE CHECKING OR FILLING FLUIDS, AND THAT NO OIL IS ALLOWED TO CONTAMINATE THE 'V' BELTS WHEN FILLING FLUIDS.

ENGINE OIL

Check the engine oil level is midway between min & max marks on the dipstick.

ALWAYS USE THE CORRECT GRADE OF OIL AS SPECIFIED IN THE ENGINE MANUFACTURERS HANDBOOK

FAN SYSTEM HYDRAULIC FLUID

Check the level in the reservoir and top up as necessary with recommended fluid - see technical data.

STEERING HYDRAULIC FLUID

Check the level in the hydraulic reservoir and top up as necessary with the recommended fluid - see technical data.

COOLING SYSTEM

DO NOT REMOVE THE FILLER OR PRESSURE RELIEF CAPS FROM THE COOLING SYSTEM HEADER TANK WHEN ENGINE IS HOT.

The coolant is under pressure and may blow out causing severe scalding.

Check the level of coolant in the header tank using the sight glass adjacent to the coolant filler cap.

Always replace the filler caps and dipsticks after carrying out checks.

WARNING

For safety, personnel should only carry out checks in the engine compartment with the ignition turned off, vehicle isolated and a sign over the dash board preventing the start procedure If the engine is running personnel should take extreme care to avoid moving parts.

NOTE:

See page 29 for location of engine oil filler, dipstick, coolant level indicator and coolant filler cap.

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GENERAL MAINTENANCE

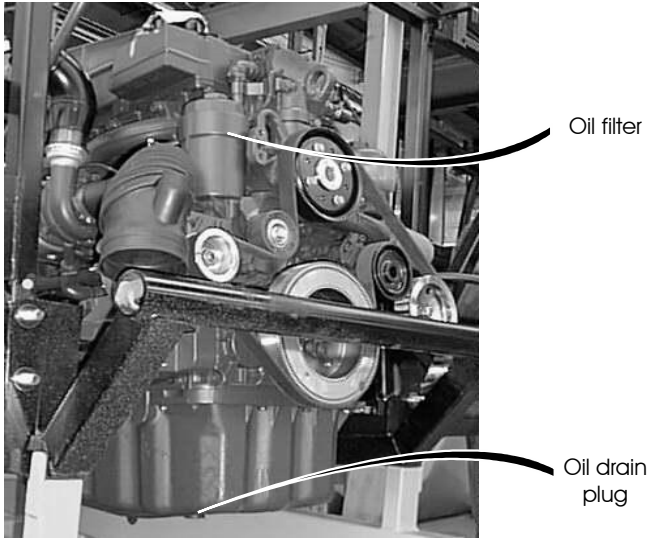
ENGINE

For ease of inspection, the engine should be kept clean, Make periodic checks to ensure there are no loose bolts, oil or water leaks. Report any abnormal conditions to the company maintenance personnel.

ENGINE OIL CHANGE

The engine oil and filter must be changed in accordance with the Optare Tempo Service Schedules.

MERCEDES ENGINE



USED ENGINE OILS

WARNING
- Prolonged and repeated contact may cause skin disorders.
- Avoid excessive contact, wash thoroughly after contact.
- Keep out of reach of children.

PROTECT THE ENVIRONMENT

It is illegal to pollute drains, water courses or soil. Use authorised waste disposal facilities, including civic amenity sites and garages providing facilities for receipt of used oil. If in doubt contact your local authority for advice.

DO NOT USE A POWER WASH ON THE ENGINE ELECTRONICS OR HARNESSES.

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GENERAL MAINTENANCE

TRANSMISSION - ALLISON
PERIODIC INSPECTIONS

The ALLISON AUTOMATIC TRANSMISSION requires minimal maintenance. Careful attention to oil level, selector linkage, and throttle modulator is most important.

For easier inspection the transmission should be kept clean. Make periodic checks for loose bolts and leaking oil lines. Check the condition of the control linkages regularly. Check the engine cooling system occasionally for evidence of transmission oil which would indicate a faulty oil cooler. Report any abnormal conditions to the company maintenance personnel.

IMPORTANCE OF CORRECT OIL LEVEL

The transmission oil cools, lubricates transmission parts and transmits power. It is important that the correct oil level be maintained at all times. If the oil level is too low, the converter and clutches will not receive an adequate supply of oil. This can result in poor performance or transmission failure. If the oil level is too high, the oil will aerate, causing the transmission to overheat. Check the oil level at intervals specified in your Optare Tempo Service Schedules. Check for abnormal oil level, a milky appearance indicates coolant in the oil.

OIL CHECK PROCEDURE

Always clean around the end of the fill tube before removing the dipstick. Dirt or foreign matter must not be permitted to enter the oil system, it can cause valves to stick, creates undue wear of transmission parts, or clogged passages. Check the oil level by one of the following three procedures (overleaf) and report any abnormal oil level to the company maintenance personnel.

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GENERAL MAINTENANCE

COLD CHECK

NOTE:
The purpose of the cold check is to determine if the transmission has enough oil to be safely operated until a hot check can be made.

A cold check may be made when the sump temperature is 60-120°F (15-49°C).

Run the engine for at least 1 minute to clear the oil system of air.

With the engine running at idle, wipe the dipstick clean and check the oil level. any level within the COLD RUN (REF FILL) band is satisfactory for operating the vehicle. If level is not within the COLD RUN (REF FILL) band, add or drain oil as necessary to bring the level to the middle of the COLD RUN (REF FILL) band.

Perform a hot check at the first opportunity after normal operating temperature (160-200°F, 71-93°C) is reached.

NOTE:
The hot and cold check level marks are on opposite sides of the dipstick.

HOT CHECK

NOTE:
The oil must be hot to ensure an accurate check. The oil level rises as temperature increases.

Operate the transmission in a drive range until normal operating temperature (160-200°F, 71-93°C) is reached.

Park the vehicle on level ground, shift to (N) neutral and apply the park brake. Let the engine run at idle speed.

Wipe the dipstick clean and check the oil level. The safe operating level is anywhere within the HOT RUN band on the dipstick.

If the level is not within this range, add or drain oil as necessary to bring the level to the middle of the HOT RUN band.

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GENERAL MAINTENANCE

ELECTRONIC CHECK

Simultaneously press the UP and DOWN arrow keys to enter the oil level display mode.
A two minute countdown begins after the following conditions are met:
* Engine is at idle.
* Sump oil is at operating temperature.
* Transmission output shaft is stopped.
* Transmission is in neutral.
* Oil level sensor is functioning properly.

Failure to meet any of the above conditions stops the two minute countdown and the display shows the cause by means of a code:

Code	Meaning
OL,- -,50	Engine rpm too low.
OL,- -,59	Engine rpm too high.
OL,- -,65	Neutral not selected.
OL,- -,70	Sump oil temp too low.
OL,- -,79	Sump oil temp too high.
OL,- -,89	Output shaft rotating.
OL,- -,95	Oil level sensor failure.

The shift selector can only display one Character at a time.
The display flashes and a 8,7,....1 count occurs during the two minute countdown. Oil level information displays after the countdown.

After two minutes the shift selector displays the oil level data as in the following examples:

OL,OK,OK - Oil level correct
OL,LO,01- Oil level one quart low_or as many quarts as needed.
OL,HI,01 - Oil level one quart high_or as many quarts as overfilled.

Exit the oil level display mode and return to neutral by pressing the neutral selection button.

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GENERAL MAINTENANCE

AIR CLEANER

The air cleaner must be regularly checked and renewed when the element becomes unserviceable.

If the "Air filter clogged" warning light illuminates, have the air intake system checked immediately it is safe to do so

Do not use this warning light to determine air filter change periods, it is intended as an indication that the air filter condition may lead to engine malfunction.

WARNING
FAILURE TO CHANGE A CLOGGED AIR CLEANER ELEMENT COULD RESULT IN SEVERE ENGINE DAMAGE.

Filter housing lid securing clips

Removal:-
Unclip the lid of the filter housing and ease the bottom of the filter element towards the left to unseat the seal, pull the filter element downwards and out of the filter housing.

Inspect sealing surface and clean with damp cloth.

Inspect intake system seals and tighten clamps if necessary.

Check replacement filter for damage prior to fitting.

CAUTION:
DO NOT CLEAN OR RE-USE POWERCORE FILTERS.

Seat filter element fully before replacing lid.

Refitting is the reverse of removal, please note orientation of lid.

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GENERAL MAINTENANCE

COOLING SYSTEM

ANTI-FREEZE
The coolant must be checked regularly with a calibrated hydrometer for correct concentration of anti-freeze. For proper protection, a 50% solution must be used.

ANTI-FREEZE CONTAINS TOXIC CHEMICALS WHICH MUST NOT BE SWALLOWED OR ALLOWED TO COME INTO CONTACT WITH THE SKIN.

When handling anti-freeze, always use protective clothing and gloves. In the case of accidental skin contact, wash the area thoroughly with clean water.

EXTERNAL CLEANING OF RADIATOR

In very dusty conditions or where excessive insects or debris is likely, the radiator matrix must be kept clear by pressure washing water through from the engine side.

REFUELLING

The fuel tank filler is located on the right hand side of the vehicle in a cut out portion of the rear most bodyside glass. Ensure that the filler cap and surrounding area are clean.

CARE MUST BE TAKEN WHEN REFUELING.

DO NOT WORK WITH FUEL NEAR A NAKED FLAME.

DO NOT SMOKE WHILE REFUELLING, ENSURE ALL ELECTRICAL EQUIPMENT IS SWITCHED OFF WHILE REFUELLING.

BEFORE REFUELLING IT IS ABSOLUTELY VITAL TO STOP THE ENGINE AND SWITCH OFF ANY HEATING SYSTEM WITH COMBUSTION CHAMBERS.

AFTER FILLING, WIPE AWAY ANY ACCESS FUEL IMMEDIATELY

IF THE FUEL TANK IS ACCIDENTALLY FILLED WITH PETROL, DO NOT START THE ENGINE - DRAIN THE TANK IMMEDIATELY

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GENERAL MAINTENANCE

BATTERIES

The batteries are housed in a compartment, below the emergency exit. Access is gained by lifting the hinged flap which is secured by two screws. The batteries are "maintenance free" type and under normal use will not require topping up.

In the event of an alternator failure, always remove the batteries and check the electrolyte levels. The height above the plates should be 1.5mm if the electrolyte level is low, it should be topped up to the correct height using distilled or deionised water.

In the event of an accidental discharge, it is strongly recommended that the battery is recharged fully using a mains charger at between 8 & 9 amps.

Ensure that the battery tops are kept clean and dry at all times.

Ensure that the terminal clamps and fixing bolts are secure and free from corrosion, especially on the inside surfaces.

Excessive pitting on the inside surfaces can result in high temperatures during starting which can melt the terminals.

Smear the terminals with petroleum jelly or silicone grease to prevent corrosion. Any battery cable which has pitted terminal clamps or frayed ends should be replaced.

The battery condition should be checked annually. When checking the battery, it should be removed from the vehicle, checked and fully charged on the bench.

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GENERAL MAINTENANCE

BATTERIES

DO NOT SMOKE OR USE NAKED FLAMES WHEN WORKING IN THE VICINITY OF THE BATTERIES.

DO NOT ALLOW BATTERY ELECTROLYTE TO CONTACT EYES, SKIN OR FABRICS. IN THE CASE OF ACCIDENTAL CONTACT, WASH THE AFFECTED AREA THOROUGHLY WITH COLD WATER AND SEEK MEDICAL ATTENTION AS REQUIRED.

BEFORE WORKING NEAR THE BATTERIES, REMOVE METAL JEWELLERY AND WATCH BANDS.

KEEP TOOLS WELL AWAY FROM THE BATTERY TERMINALS.

NEVER REMOVE THE CABLE TERMINALS WHILE THE ENGINE IS RUNNING.

WHEN REMOVING THE BATTERIES FROM THE VEHICLE, DISCONNECT THE EARTH LEAD FIRST. REVERSE THE PROCEDURE WHEN REFITTING THE BATTERIES.

ISOLATE THE BATTERIES AT THE ISOLATION SWITCH AND ENSURE ALL OTHER SWITCHES ARE IN THE OFF POSITION BEFORE DISCONNECTING OR CONNECTING THE TERMINALS.

IMPORTANT! REFER TO OPTARE SERVICE SCHEDULES BEFORE CARRYING OUT ANY WELDING ON THE VEHICLE.

ENSURE THAT THE BATTERY CABLE TERMINALS ARE REPLACED AFTER INSPECTION OR MAINTENANCE.

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GENERAL MAINTENANCE

CHARGING BATTERIES REMOVED FROM A VEHICLE.

Batteries must only be charged with direct current (DC).
Connect positive pole (+) of battery to positive lead (+ red) of charger.
Connect negative pole (-) of battery to negative lead (- black) of charger.
Only switch on charger after connecting it to the battery.
1/10th of the capacity is recommended as the charging current (e.g. 135A battery should be charged at max 13.5A charging current).
The acid temperature must not exceed 55 degrees C during charging, interrupt charging if this temperature is exceeded (do not disconnect the charger leads without first turning it off).
The battery can be considered fully charged when the acid density and charging voltage have stopped rising for 2 hours.
Turn off the charger before disconnecting the leads from the battery.
Ensure good ventilation during charging.
Hoppecke batteries of the type fitted to Optare vehicles are maintenance free to DIN 43539/02 and for normal operating conditions there will be no harmful loss of water and therefore no need to maintain the battery.

DURING COLD WEATHER WHEN TEMPERATURES ARE BELOW FREEZING POINT, ELECTROLYTE IN A DISCHARGED BATTERY MAY FREEZE. IF ELECTROLYTE IS NOT VISIBLE IN A BATTERY OR APPEARS TO BE FROZEN, DO NOT ATTEMPT TO RECHARGE, THIS COULD CAUSE THE BATTERY TO RUPTURE OR EXPLODE. THE BATTERY TEMPERATURE SHOULD BE ALLOWED TO INCREASE ABOVE FREEZING POINT BEFORE ANY ATTEMPT TO RECHARGE.

ALTERNATOR

The only attention the alternator requires is to maintain it in a clean condition.

NOTE

Serious damage to the alternator can occur if the following points are not observed:
Ensure that the negative terminal of the battery is earthed. reversed cable connectors will damage the alternator diodes.
Never earth the output (B+) terminal of the alternator, it must be connected directly to the battery positive terminal.
Always disconnect the battery earth cable at the battery before removing the alternator or it's component wires. Serious damage to the wiring harness and the alternator can result from earthing the output terminal.
Never operate the alternator with the output lead between the battery and the output terminal disconnected. A high voltage will develop which could burn out the rotor or damage the diodes.
If a slave battery or portable boost system is used to start the engine, ensure the cables are connected correctly i.e. positive to positive, negative to negative.

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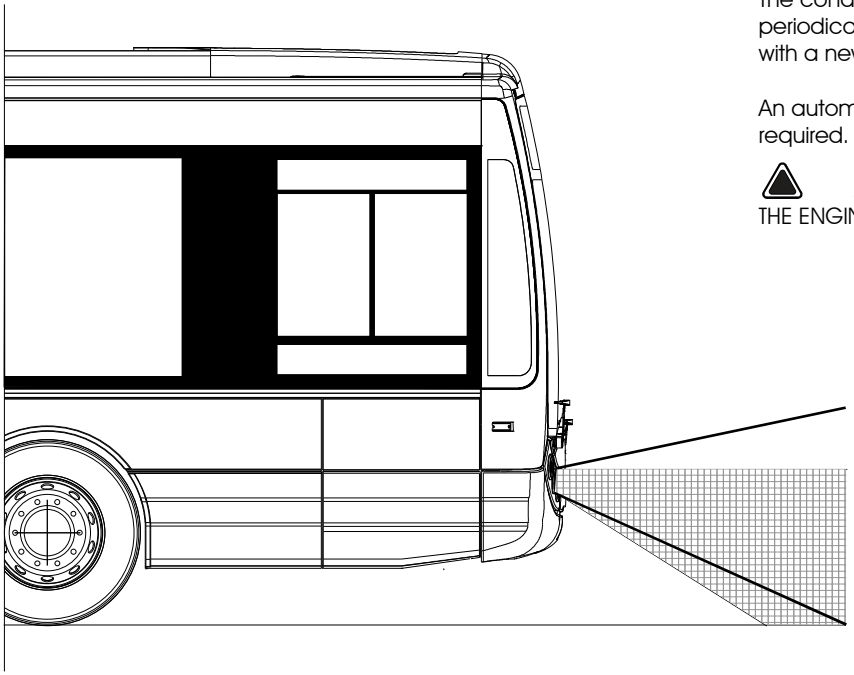
GENERAL MAINTENANCE

HEADLAMP ALIGNMENT

To avoid dazzling other road users it is important that the headlamps are correctly aligned. If a headlamp is replaced it is essential that the beam is aligned using proper equipment.



PIPE AND LOOM CLIPPING

Check the integrity of loom, and hose clipping. Any faults must be corrected immediately

LACK OF INTEGRITY OF CLIPPING IS ONE OF THE MAIN CAUSES OF VEHICLE FIRES.

ALTERNATOR DRIVE BELT

The condition of the alternator drive belt should be checked periodically. If the belt shows signs of wear, it should be replaced with a new item.

An automatic belt tensioner is fitted so that no adjustment is required.

ALWAYS KEEP CLEAR OF THE ALTERNATOR DRIVE BELT WHEN THE ENGINE IS RUNNING.

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GENERAL MAINTENANCE

WHEELS

The wheels should be removed, cleaned and visually inspected every 12 months or 50,000 miles whichever is the sooner. Wheels held in stores should be cleaned and inspected every three months. The wheel inspections should cover the following areas:

General overall condition.
Mounting surfaces to be free from rust and heavy paint.
Lightening holes to be undamaged and rust free.
The wheels should be repainted as necessary, except on mounting faces.

CHECK THE SECURITY OF THE ROAD WHEEL NUTS FOR CORRECT TIGHTENING TORQUE. SEE TECHNICAL DATA SECTION.

WHEEL BALANCING

It is important that each wheel and tyre assembly is correctly balanced in order to obtain the best steering and ride quality. tyre wear may effect wheel balancing and therefore periodic wheel balancing is recommended.

TYRES

Maintenance of the correct tyre pressure is essential for passenger comfort, safety and long tyre life.

ENSURE THAT THE TYRES ARE INFLATED TO THE RECOMMENDED PRESSURES - SEE TECHNICAL DATA SECTION.

Periodically check the tyres for wear, tread depth and visible damage. Immediately rectify any mechanical defects, such as faulty wheel alignment.

It is advisable to fit evenly matched tyres on dual mounted wheels.

DO NOT SUBJECT THE TYRES TO UNNECESSARY STRESSES AND WEAR BY OVERLOADING, VIOLENT BRAKING OR SUDDEN ACCELERATION.

NEVER ATTEMPT TO FORCE THE STEERING WHEEL WHEN FULL LOCK HAS BEEN REACHED OR THE WHEELS ARE AGAINST AN OBSTRUCTION.

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GENERAL MAINTENANCE

WINDSCREEN WASHER RESERVOIR

The wind screen washer reservoir should be topped up as necessary with a mixture of water and screen wash additive. After topping up the washer, operate the pump once to ensure that the system is primed and the jets are working.

Do not operate the washer for prolonged periods without fluid, as this may damage the pump mechanism.

WINDSCREEN WIPERS

New wiper blades should be fitted regularly, especially if the vehicle is operated in dusty areas or if the blades have to frequently clear an iced screen.

Note:
Do not operate the windscreen wipers on a dry windscreen, this can put excessive strain on the wiper motor and lead to premature failure.

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GENERAL MAINTENANCE

ELECTRICAL - EXTERNAL

Clean all lenses.

Check and correct as necessary:-

Sidelamps.
Headlamps - mainbeam.
Headlamps - dipbeam.
Tail lamps.
Stop lamps.
Rear fog lamp.
Reversing Lamp.
Marker lamps.
Direction indicators - front, rear & sides.
Destination & route box lamps.
Number plate lamp.

ELECTRICAL - INTERNAL

Check and correct as necessary:-

Saloon lamps.
Cab lamp.
Entrance Lamp.
Warning lamps and buzzer operation.
Speedo and gauge lamps.

GENERAL BODY ITEMS

Check and correct as necessary:-

All entrance and emergency exits are operational from the vehicle interior and exterior.
Bell pushes are in working order.
All internal and external access flaps.
All access traps in floor.
The saloon floor is clean and free from contamination.
The entrance step edgings are secure.
Seats are clean and free from any contamination.
All windows are clean.

EXHAUST SYSTEM

Check that excessive smoke is not emitted from the exhaust.
Check for leaks from joints in the exhaust system.

AVOID INHALING EXHAUST GASES.

Ensure that the vehicle is either in the open or in a well ventilated area before starting the engine.

DRIVERS SEAT

Check the attachment of the pedestal to floor structure, and operation and security of the vertical and horizontal adjustment locking positions.

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GENERAL MAINTENANCE

CARE OF EXTERIOR

The basic maintenance routine for exterior bodywork is washing periodically, using fresh water only. The wheelarches and underframe should be cleaned periodically using pressurised fresh water. Glass to be wiped using fresh water and chamois leather.

WINDSCREEN

The windscreen wipers are hinged and can be lifted clear of the glass when cleaning the windscreen.

DO NOT PUSH THE BLADES ACROSS THE WINDSCREEN AS THIS WILL DAMAGE THE WIPER LINKAGE.

ANTI CORROSION TREATMENT

The complete underframe structure must be checked regularly to ensure that no erosion of the undeseal treatment has occurred and for any stone chip damage. Any deterioration of the anti-corrosion treatment must be rectified immediately. For technical information relating to treatment and application contact UNITEC.

TRIM AND FLOORING

The trim material must only be cleaned using proprietary cleaners. Spirit or solvent based cleaners or polishes MUST NOT be used on PVC based floor coverings.

MIRRORS

Clean the mirrors using fresh water and a chamois leather.

EMERGENCY DOOR

The emergency door hinge and lock mechanism require lubrication at regular intervals. - see optare Tempo Service Schedules.

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SALOON HEATING SYSTEM

The saloon heating system contains anti-freeze which must not be swallowed or allowed to come into contact with skin.

Check all compression fittings and silicone hose connections for any indication of leaks.

Rectify any suspect connections and test system.

ENTRANCE DOORS

The entrance door must be serviced in accordance with Optare Tempo Service Schedules.

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LUBRICANTS - TERBERG VEHICLE SPECIFICATION

UNIT	OIL SPECIFICATION	CAPACITY
Engine Mercedes OM906LA	OX 90	29 Ltr
Gearbox Allison	Castrol Transynd TES 295 15W-40	25 Ltr
Meritor U177 Rear Axle Disc Brakes	OEP 250	Diff 18.5 ltrs
Power Steering Hydraulic Fluid	OX 75	7 Ltr approx
Fan Drive hydraulic Fluid	OX 75	3Ltr
Grease Points	XG 279	As Required
Battery Terminals	PX 7	As Required

WATER

Engine Coolant Including Heating System:	Includes 50% solution inhibited ethylene glycol anti-freeze. AL 39 (50/50 WITH WATER)
Mercedes engine	Approx 62 Ltrs
Windscreen Wash	AL 11 (50/50 WITH WATER) 10 Ltrs

REAGENT

STANDARD	DIN 70 070	21 Ltrs

FUEL	
STANDARD	200 Ltrs

SEE OPTARE TEMPO SERVICE INFORMATION SHEETS FOR RECOMMENDED OIL CHANGE PERIODS

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TECHNICAL DATA

ENGINE

Mercedes Benz OM 906 LA, 6 cylinder, 210Kw.

TRANSMISSION

Allison World Series T310R Automatic Ratio's:

1st - 3.49:1
2nd - 1.86:1
3rd - 1.41:1
4th - 1:1
5th - 0.75:1
Reverse - 5.03:1

SUSPENSION

Rolling lobe air bellows on front, (leading). 2 rolling lobe air bellows plus ½ eliptical leaf springs on rear. Telescopic dampers and panhard rods all round.

STEERING

ZF re-circulating ball power steering.

BRAKES

Dual air circuit system with 'S' cam brakes on both axles. Park brake actuation by a hand lever actuating air operated spring brakes on the rear axle.

ELECTRICS

24V earth return system multiplexed with 5 input/output units with two12V low maintenance 135Ah batteries and an (100 amp alternator).

AXLES

Front - forged beam axle with spigot wheel fitment.

Rear - Hypoid axle with spigot wheel fitment. Ratio:
Allison transmission (5.29:1)

WHEELS/TYRES

Wheels - 7½ x 22½ x 148 offset.
Tyres - 275/70R x 22½

TYRE PRESSURES (Bridgestone)

Front - 8.3 bar / 120 PSI
Rear - 6.9 bar / 100 PSI

WHEELNUT TORQUE

575Nm / 429lbft

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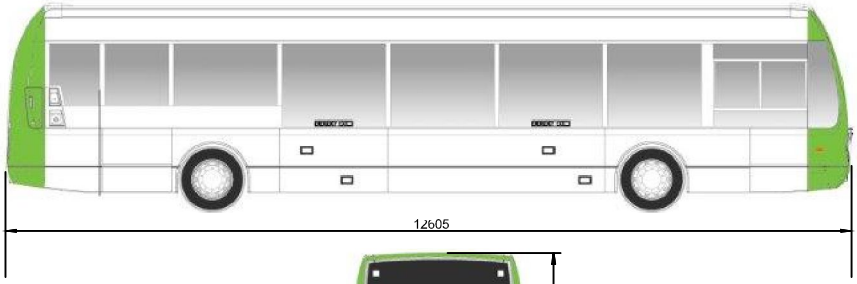
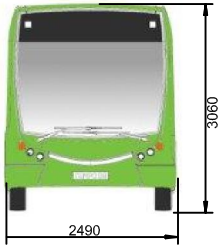
TECHNICAL DATA

NOMINAL DIMENSIONS (mm)

Model ref	X1260
Overall length	12605
Overall width	2490
Overall height (unladen)	3060
Wheelbase	6985
Front overhang	2700
Rear overhang	2920
Turning circle (kerb - kerb)	10763





DRIVERS DAILY CHECKS:

Drivers of this vehicle should carry out the following operations daily.
Any faults found must be rectified before entering the vehicle into service.

CHECK:-

Cooling system level.
Oil level.
Operation of all lights, switches, warning lights, direction indicators, stop lights and horn.
That instruments are working correctly.
The windscreen wipers and washers for correct operation.
The windscreen washer fluid level.
Wheel nut security.
Security of exterior panels / panel fixings.
Entrance / exit ramp operation and security.
Safety equipment - operation of emergency exits, fire extinguisher contents, full compliment of breakglass hammers etc.