

Mercedes-Benz Sprinter



OWNER'S MANUAL

Pressure-Way Industries, Inc. takes great pride in the quality and excellence that the Pressure-Way name represents. We appreciate having you as a customer and welcome you into the Pressure-Way family. This manual is provided to introduce you to the many features of your new Mercedes-Benz Sprinter (F530) including operation, maintenance and warranties. We strongly advise you to take time to read this manual, the Mercedes-Benz Sprinter chassis owner's manual as well as those of the motorcycle components before you use your new motorcycle. It will help you to better understand the many operational features of this recreational vehicle.

4) Reasonable precautions have been taken in the preparation of this manual. We have been as accurate as possible at the time of its publication. However, due to our policy of continuous improvement and refinement to our product, Pressure-Way reserves the right to make product changes at any time without prior notice and without incurring obligations. As a result, Pressure-Way assumes no responsibility for errors or omissions in the accuracy of the content of this manual.

We know that you will enjoy your new Pleasure Way and we wish you many miles of pleasant and carefree driving. Happy Travel!

After reading this manual, be sure to keep it in the motorhome as a reference. Your Pleasure Way dealer will be glad to answer any further questions about the operation of your motorhome and the appliances.



 WARNING

IT IS NOT SAFE TO USE COOKING APPLIANCES FOR COMFORT HEATING.
Cooking appliances are not designed for extra operation.

Before Operation:

Open well wood vent or partition and wash face.
Open window.

FAILURE TO COMPLY COULD RESULT IN DEATH OR SERIOUS INJURY

Under normal, the amount of oxygen supply is limited due to the size of the recreational vehicle, and proper ventilation while using the cooking appliances must be maintained. It is especially important that cooking appliances not be used for more than 15 minutes in the absence of adequate ventilation. When the appliance is used for long periods of time

 WARNING

DO NOT FILL CONTAINER (S) TO MORE THAN 80 PERCENT OF CAPACITY. FAILURE TO COMPLY COULD RESULT IN DEATH OR SERIOUS INJURY.

 DANGER

IF YOU SMELL PROPANE:

IF YOU SMELL PROPANE:
Fuzzing isn't any "open flame, pilot lights and smoking materials"

Do not touch electrical outlets or wires.

Open doors and other ventilating openings.

Leave the area until the water dries.

Make the propane bracket of heater and tank securely connected before use with gas. Failure to comply could result in explosion resulting in death or serious injury.

For the second group, several factors in the workplace

 WARNING

Propane cylinders shall not be placed or stored inside the vehicle. Propane cylinders are equipped with safety devices that relieve excessive pressure by discharging propane to the atmosphere.

FAILURE TO COMPLY COULD RESULT IN DEATH OR SERIOUS INJURY.

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WARRANTY / POLICIES

CUSTOMER RESPONSIBILITY

It is important you read and understand the information provided to you in the package containing all the manuals and information pertaining to your Pleasure-Way motorhome.

Familiarize yourself with the applicable warranties. You are responsible for ensuring the procedures for obtaining warranty repairs are followed properly. It is your responsibility and obligation to return your motorhome to your authorized Pleasure-Way dealership for warranty service repairs.

As the owner of the motorhome, you are responsible for regular and proper maintenance performed in accordance with the Pleasure-Way and OEM manuals provided. Regular and proper maintenance will help prevent conditions arising from neglect that are not covered under warranty.

WHAT THIS LIMITED WARRANTY COVERS

Pleasure-Way Industries, Ltd. warrants the specified new 2018 motorhome free from defects in material and craftsmanship on portions manufactured by Pleasure-Way Industries Ltd. under normal use and service. Pleasure-Way Industries' obligation, under this limited warranty, shall be limited to 60 months / 60,000 miles / 100,000 kilometers (whichever comes first) after the date of purchase by the first retail purchaser from an Authorized Pleasure-Way Dealer. Warranty shall be fulfilled by an Authorized Pleasure-Way Dealer or Authorized Pleasure-Way service facility.

This Pleasure-Way Warranty is non-transferable to subsequent owners.

WHAT THIS LIMITED WARRANTY DOES NOT COVER

This limited warranty shall not apply to the following:

- A Motorhome that has been altered outside our factory in any way so as, in our sole opinion and discretion, to affect its stability, operation or reliability.
- Deterioration due to wear and/or exposure, including but not limited to rust, corrosion, oxidation and cosmetic blemishes.
- A Motorhome that, in our sole opinion and discretion, has been subject to misuse, negligence, or accident.
- A Motorhome that has been declared a total loss by an insurance company, or a motorhome title indicator is designated as "salvage", "junk", "rebuild" or a word of similar impact.
- The automotive chassis is covered by its own manufacturer's warranty, including but not limited to, power train, engine, drive shaft, lines and muffler. To learn more about the specific automotive chassis not covered under the Pleasure-Way Warranty, please contact your authorized selling dealer, Pleasure-Way Industries Ltd. or review your Mercedes-Benz or Ram ProMaster warranty package information provided with the coach.
- Appliances and components covered by their own manufacturer's warranties, including but not limited to: the microwave, refrigerator, stove, heater, television, generator and roof air conditioners. To learn more about specific components or appliances not covered under the Pleasure-Way warranty please contact your selling dealer, Pleasure-Way Industries or review your warranty package information provided with the coach.
- Unauthorized repairs, alterations or modifications.
- Routine maintenance.
- Items that are working as designed but which you are unhappy with because of the design or function.
- Damages caused by, but not limited to, hail, tornadoes, lightning, floods, earthquakes, hurricanes, fire, rain, and all other environmental conditions, when include but are not limited to, tree sap, tar, chemicals, oil, salt, road hazards, stone chips, infections, rodents and / or acts of God.
- Defects or repairs required, as an example but not limited due to improper loading, load distribution, accident, collision, vandalism, abuse, neglect, improper maintenance, rust or corrosion.
- Goods damaged while stored in exterior storage compartments. Exterior storage compartments may not be moisture free due to weather and humidity conditions. It is advised that you store items accordingly.
- Condensation and the results of condensation including, but not limited to, water damage and the growth of mildew or mold. Mold and mildew are natural growths given certain environmental conditions and are not covered by the terms of this warranty.
- Failure of the coach and / or chassis resulting in incidental damages, such as but not limited to: goods stored both inside and outside the coach, loss of use and equipment of Motorhome, inconvenience, cost of rental vehicle, cost of accommodation, travel expenses, towing, meals, and other miscellaneous incidental expenses. Some states do not allow exclusions or limitations of incidental or consequential damages, so the above limitations or exclusion may or may not apply to you.
- Damage caused by the failure to seek and obtain repairs in a timely manner.
- Damage caused by the failure to use reasonable efforts to mitigate damage caused by defects.
- Damage caused by the failure to comply with the instructions set forth in the owner's manual.
- Goods damaged while stored in exterior storage compartments. Exterior storage compartments may not be moisture free due to weather and humidity conditions. It is advised that you store items accordingly.
- Condensation and the results of condensation including, but not limited to, water damage and the growth of mildew or mold. Mold and mildew are natural growths given certain environmental conditions and are not covered by the terms of this warranty.
- Failure of the coach and / or chassis resulting in incidental damages, such as but not limited to: goods stored both inside and outside the coach, loss of use and equipment of Motorhome, inconvenience, cost of rental vehicle, cost of accommodation, travel expenses, towing, meals, and other miscellaneous incidental expenses. Some states do not allow exclusions or limitations of the damage or consequential damages, so the above limitations or exclusion may or may not apply to you.

THE CONDITIONS OF THIS LIMITED WARRANTY SHALL NOT APPLY TO DEGRADATION DUE TO WEAR AND TEAR AND EXPOSURE AFTER THESE LIMITATIONS

FOR NINETY (90) DAYS from the original retail purchase date:

- All seat, curtain, door panel and wall fabric used in the coach
- Window seals and caulking
- Exterior power cable hatch
- City water fill
- Roof light
- Exterior cable TV outlet
- Carpet
- Linoleum
- Black and gray water termination valves
- Exterior strapping
- Painted plastic exterior body molding and bumpers

FOR ONE (1) YEAR from the original retail date purchase date or 12,000 miles / 20,000 kilometers (whichever comes first), by the original retail purchaser from an Authorized Pleasure-Way Dealer:

- All seat, curtain, door panel and wall fabric used in the coach
- Window seals and caulking
- Exterior power cable hatch
- City water fill
- Roof light
- Exterior cable TV outlet
- Carpet
- Linoleum
- Black and gray water termination valves
- Exterior strapping
- Painted plastic exterior body molding and bumpers
- Pointing exterior moldings (magnifies the original equipment manufacturer condition of the plastic molding. Some conditions of the plastic, such as not recommended to, body attachment points and texture may be more visible when pointed. These are considered normal.

FOR TWO (2) YEARS or 24,000 miles or 40,000 kilometers (whichever comes first) by the original retail purchaser from an Authorized Pleasure-Way Dealer:

- Ultra-leather® fabrics
- Foam used in cushions

FOR THREE (3) YEARS or 36,000 miles or 60,000 kilometers (whichever comes first) by the original retail purchaser from an Authorized Pleasure-Way Dealer:

- Exterior painted surfaces

This warranty is expressly in lieu of all other warranties, expressed or implied, and all other obligations or liabilities for alleged representation or negligence. Pleasure-Way Industries Ltd. neither assumes nor will it allow any other person to assume for us any liability in connection with the sale of our Motorhomes other than expressed above.

All correspondence should be directed to the authorized Pleasure-Way Dealer from whom the Motorhome was purchased and must specify the serial number and date of purchase of Motorhome in question.

Pleasure-Way Industries Ltd. reserves the right to make changes in Motorhomes built and/or sold by it at any time without incurring any obligation to make the same or similar changes on Motorhomes previously built and/or sold by Pleasure-Way Industries Ltd.

For emergency repairs while traveling, you may choose to deal with non-affiliated RV service facilities; however, all warranty repairs must be pre-authorized by Pleasure-Way. Pleasure-Way will, at its option, replace or repair free of charge any defective part, including labor. The purchaser shall notify their authorized Pleasure-Way Dealer within the warranty period.

If you obtain warranty repairs from a non-authorized RV service facility without Pleasure-Way pre-authorization, it is at Pleasure-Way's sole discretion whether or not to reimburse the claim.

In the event that this Motorhome is used for commercial or rental purposes, the warranty coverage shall be limited to one (1) year 12,000 miles / 20,000 km (whichever comes first) from the date of original purchase.

OBTAINING WARRANTY REPAIRS

To obtain warranty repairs you must contact your authorized Pleasure-Way dealer and schedule an appointment. It is best if you have a written list of defects or items in need of repair. As the owner, you are solely responsible for the maintenance of the motorhome as required or recommended by the owner's manual and associated costs of that maintenance. Repairs necessitated by failure to maintain the Motorhome as required or recommended are not covered by warranty.

NOTE: Pleasure-Way does not control the scheduling of service work at authorized or independent dealerships. You may encounter some delay in scheduling or completion of work.

WARRANTY POLICIES

Warranty repairs must be within the five year or 60,000 miles / 100,000 kilometers (whichever comes first) limited warranty.

Pleasure-Way warranty registration cards must be on file before any claims will be processed. Claims made without warranty registration cards will be rejected until proof of ownership can be established.

Pleasure-Way Industries Ltd. will not reimburse any claims for work done on any components or appliances that are covered under their respective manufacturer's warranty. These warranties must be obtained through the manufacturer of the appliance or component. Examples include but are not limited to refrigerator, microwave, roof air conditioning, water pump, furnace, TV etc.

All warranty work required to be done on the chassis must be taken to an authorized Ford, Mercedes-Benz, Chrysler or Chevrolet dealership (depending on your chassis make) and processed through their warranty procedures. Pleasure-Way Industries Ltd. will not reimburse any claims regarding the chassis. Pleasure-Way Industries Ltd. will pay for the removal and reinstallation of motorhome components only if absolutely necessary to perform chassis warranty repairs. Pleasure-Way Industries Ltd. will not reimburse any costs in the removal and reinstallation of these components if it is out of the warranty period, non-warranty repairs, and/or routine maintenance or service.

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SAFETY

For your safety while traveling with your Pleasure-Way Motorhome, we have provided safety components throughout the vehicle. In order for your vehicle to meet the required safety conditions, these components must be tested and maintained on a regular basis, according to the detailed manufacturer's operating instructions.

All Pleasure-Way Motorhomes in Canada and USA are CMVSS certified, and may exceed the approved installation criteria.

All Pleasure-Way Motorhomes in the United States are FMVSS certified and bear the NHTSA seal of approval, and may exceed the individual state requirements.

OCCUPANT AND CARGO CARRYING CAPACITY

The Tie and Loading Information label, found on the driver side door pillar, states the OCCC of your motorhome. This figure states the maximum allowable weight of all occupants (including the driver), plus the weight of all food, tools, full fresh water tanks, and person(s) in the cargo. The tongue weight of a towed trailer also counts as cargo. If you are traveling with water in your holding tank, weight can be calculated by using this ratio: 1 kg/L or 8.3 lb/gal.

The OCCC of your motorhome was calculated by adding the weight of the full LP fuel tank, the full vehicle fuel tank and the dry weight of the motorhome (as shipped from the factory) and subtracting that number from the Gross Vehicle Weight Rating (GVWR).

NOTE: All US units include a second OCCC label on the inside of the passenger door.

SMOKE DETECTOR

A smoke detector is located on the ceiling near the front of your unit. Smoke detectors may give you a warning of smoke, but only if you use and maintain them in accordance to the manufacturer's instructions. This device should be tested after each time your vehicle has been in storage, before each vehicle use, and at least once each week during your vehicle use. Do not block or obstruct in the area where the smoke detector is located. Always use the detector's battery (once the detector upon receiving your new unit and that you install a fully charged fresh battery at least once a year).

TIE AND LOADING INFORMATION RECOMMANDATIONS SUR LES PNEUS ET LE CHARGEMENT			
Tongue Weight: Total: 500 lbs. Max: 500 lbs.			
The combined weight of occupants and cargo should never exceed 500 lbs. or 227 kg.			
TYPE PNEUS	SIZE DIMENSIONS	LOADING INSTRUCTIONS PNEUS A PNEUS	SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION
FRONT RIGHT			
FRONT LEFT			
REAR RIGHT			
REAR LEFT			



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FIRE EXTINGUISHER

A fire extinguisher is located on the kitchen cabinet next to the main entrance door for ease of accessibility from the interior or exterior.

WARNING: This fire extinguisher is a type "ABC", which will extinguish flammable liquids, electrical fires, and trash, wood and paper fires. You should inspect the extinguisher at least once a month according to the manufacturer's instructions.



LP/CARBON MONOXIDE DETECTOR

A liquid propane (LP) / carbon monoxide (CO) gas detector is located near the floor level below the driver side entrance. This detector will detect liquid propane gas, carbon monoxide and other gases that are heavier than air. The detector is powered by the coach battery and will only update when the 12-volt battery disconnect switch is ON.

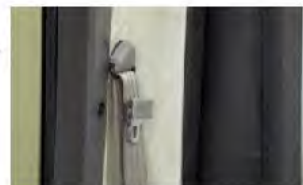
The detector should be tested after each time your vehicle has been in storage, before each trip, and weekly while the vehicle is in use. The test procedure should be performed in accordance to manufacturer's instructions. Do not block air circulation in the area where the detector is located.

NOTE: The LP/CO detector will sound to indicate a low coach battery voltage.



SEAT BELTS

Only seats equipped with factory installed seatbelts are to be occupied while the vehicle is in motion. All passengers must be seated in these seats only, with the seat belts fastened, while the vehicle is in motion.

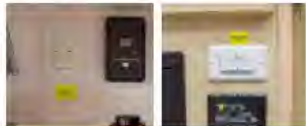


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GFCI OUTLET

A ground fault circuit interrupter (GFCI) 110-volt receptacle is located on the driver side exterior provides protection against line-to-ground electrical shock hazards that could be harmful or even fatal. The outlets that are on this circuit are the exterior kitchen and rear bench receptacles. The GFCI receptacle must be tested at least once a month in accordance with the manufacturer's instructions.

The GFCI for the fridge is found on the driver side exterior lap above the LP/LPG gas detector. The GFCI for the microwave is found in the cabinet above the Blu-ray player.



REFUELING

When you are refueling your fuel tank, always engage system, ensure that your vehicle and your camp's LP valve is shut off. Ensure that the pilot lights have been extinguished as well. Some appliances in your vehicle have auto ignition. Ensure the appliances are shut off to prevent fire or explosion.

WARNING: Even with the main LP valve shut off there is enough LP gas in the lines for the pilot lights to continue to burn.



FILLING THE LP GAS FUEL CYLINDER

The propane tank valve must be closed and all pilot lights and appliances, along with their igniters, must be turned OFF during refueling of the motor fuel tank. The propane fuel tank. Only a trained personnel should refuel your propane tank. Do not refuel the propane tank more than out of its capacity. Liquid will appear at the pressure valve at 80%. To reduce the danger of fire and/or explosion do not store propane or other flammable liquids inside your vehicle.

NOTE: When the tank reaches 80% capacity, the LP gauge on the touch screen control panel will read 100%.

WARNING: Ensure the propane system valve is fully shut when the vehicle is in motion. It is not safe to travel while propane appliances are in use. The propane switch is located in the driver side utility center.



MOTORHOME EXTERIOR

CHASSIS PAINT CODES (Mercedes-Benz Sprinter Codes)

Mercedes-Benz Gray White - 9136
Mercedes-Benz Brilliant Silver Metallic - 9744
Mercedes-Benz Arctic White - 9147
Mercedes-Benz Pearl Silver Metallic - 9744



Paint codes for the Sprinter van can be found on the driver seat base by opening the upper flap and lifting the right hand flap.

MOTORHOME DIMENSIONS AND CAPACITIES

Your motorhome is larger than your standard van or automobile, so please be careful when entering underpasses, garages, parking lots, etc.

Towing capacity is based on GVWR 13,550 - GVWR 13,551 = 5000 pounds if the vehicle when loaded is less than 8550 pounds. This weight can be added to the towing capacity up to the Mercedes-Benz hitch rating, rear axle and Mercedes-Benz Sprinter limitations as listed in the Mercedes-Benz Sprinter manual. The hitch tongue weight must be included in the loaded weight of the vehicle.

NOTE: All measurements and capacities are approximations. Every effort has been made to be as accurate as possible.

DIMENSIONS

Length Bumper to Bumper	22'3"	19'7"	59.4 cm
Length Bumper to Tire Carrier	24'9"	20'9"	63.2 cm
Height with A/C	11'5"	9'7"	29.2 cm
Width with mirrors Extended	9'5"	7'11"	24.1 cm
Interior Standing Height	7'5"	6'3"	19.0 cm
Towing Capacity	5000 pounds		2268 kg

CAPACITIES

Fuel	24 US gal	23 liters	174 pounds
Fresh Water / Potable Water	20 US gal	75 liters	16.0 pounds
Gray Water (sink/shower)	15 US gal	57 litres	12.5 pounds
Black Water (toilet)	12 US gal	45 litres	10.0 pounds
Liquid Propane (LP) (at 80%)	8.14 US gal	31 litres	34.2 pounds

WEIGHT

APPLIANCES

It is not safe to use cooking appliances to heat the interior of the coach due to the danger of activation. It is recommended that you read all of the appliance owner / operator's manual prior to using the appliances. It is recommended that a source of fresh air be supplied when operating a propane appliance.



TV

When this vehicle is in motion, it is necessary to have the flat screen television locked into travel position to prevent damage to the flat screen and to the TV cabinet.



EMERGENCY ESCAPE

If the need to make an emergency escape from the interior of your motorhome arises, all motorhomes are equipped with escape hatches. Your choices of escape routes are to follow the main entrance, side door, the driver and passenger side front doors and the rear door.



GENERATOR

When running a boat or some form of watercraft with your Pleasure-Way motorhome, it is imperative that you follow the generator's safety. Please refer to the generator owner / operator's manual for proper use and maintenance information. The generator is located behind the rear door, between the hand rails. The generator access door faces the rear of the vehicle.



VEHICLE GROUND CLEARANCE

Your motorhome is equipped with underside holding tanks, propane tanks, plumbing lines, propane lines and other RV related items. Please be careful when driving your motorhome on uneven or poorly maintained roads.



CHASSIS SPECS

GVWR	13550 lbs	7070 kg
GWR	10950 lbs	6145 kg
GWR Rear	3675 lbs	1660 kg
GWR Rear	3560 lbs	1621 kg
Tire (all)	17x4.75R16	
Tire (all)	16.5x16"	
Wt Pressure Front	47 psi	320 KPa
Wt Pressure Rear	70 psi	480 KPa

APPLIANCES

MANUFACTURER

MODEL

Generator	ONAN RV GQ 2500 LP	2.5HG188 1121A
Fridge 3.8 cu ft	DOMETIC (3 way)	RM8505
Convection Microwave	HIGH POINT	EM9253CW
Air Conditioner	DOM/TIC	6400170001GD
Air Conditioner Lower	DOM/TIC	3010242014
Cook Top	SMV/DOMETIC	P18922
Water Pump	SHURFLO	4008-101-345
Water Heater	TRUMA AQUA GO	DL600P
Toilet	THE TITAN AQUA MAGIC II	42051
Furnace	ATWOOD	AFSD16121
Awning	FRAMMA	F55 Eagle 10' 6" #0643F13R
Solar Panel	CARIMANAH (25 watt)	CT1-55
Solar Controller	QC POWER	QC-PWM50
TV	LG	72LJ4540
Blu ray	LG	BF439
Inverter	XANTREX FREEDOM XL	800-200
Converter/Charger	PROGRESSIVE DYNAMICS	PD 2115 AL
ATS Switch	PROGRESSIVE DYNAMICS	5100
In Dash Stereo Nav	MERCEDES-BENZ	BC001P
Cook Batteries	ECO-ION Lithium 100 Ah	LIFE PD 4
Rear Vent	FANTASTIC FAN/DOMETIC	FV8300WUSFR

PLEASE NOTE:

Appliances and options may change without notice and some appliances and equipment may be optional. Due to Pleasure-Way's policy of continuous improvement, Pleasure-Way Industries Ltd. reserves the right to make product changes at any time without incurring obligation.

The chassis manufacturer may make mechanical and option changes without Pleasure-Way Industries Ltd. incurring any obligation.

Pleasure-Way Industries Ltd. cannot be held responsible for changes made to an appliance supplied by another distributor or manufacturer.

Pleasure-Way Industries Ltd. cannot be held responsible for dealer installed options.

TIRE AND LOADING INFORMATION

The tire and loading information is located on the driver side door pillar. On this label you will find your tire size and inflation pressure information. Also listed on this label is the vehicle's gross vehicle weight rating (GVWR) and gross axle weight rating (GAWR). Please refer to your specific label for accurate information.

TIRE AND LOADING INFORMATION			
RECOMMENDED MAX. LOADS (WEIGHTS) OF 15 CHARGES			
Maximum Capacity: 15000 lbs. (6800 kg) GVWR, 15000 lbs. (6800 kg) GAWR			
TYPE	WEIGHT	MAX. LOADS (WEIGHTS) OF 15 CHARGES	MAX. LOADS (WEIGHTS) OF 15 CHARGES
FRONT	15000 lbs. (6800 kg)	15000 lbs. (6800 kg)	15000 lbs. (6800 kg)
REAR	15000 lbs. (6800 kg)	15000 lbs. (6800 kg)	15000 lbs. (6800 kg)
TOTAL	30000 lbs. (13600 kg)	30000 lbs. (13600 kg)	30000 lbs. (13600 kg)

PROPANE FILL, BREATHER VALVE AND B&Q QUICK CONNECT

This fill valve and breather valve allow the on-board propane tank to be filled. Once fluid reaches from the breather valve, the tank is filled to 80%. The pressure gauge will read 100%.



SEWER DUMP COMPARTMENT

Located on the driver side running board, the storage compartment is located behind the driver's door entrance step. This compartment gives access to the gray and black dump tanks as well as the sewer connection. The sewer hose connection is on the right hand side of the black water dump handle mounted below the driver side running board.



UTILITY CENTER

Located in the middle of the driver main wall panel, this compartment contains four main components used in your RV:

1. shore power hook-up
2. water TV hook-up
3. pressurized city water hook-up
4. LP electric gas switch



WATER HEATER VENT / ACCESS DOOR

Located above the driver side mid body below the fridge vent, this vent gives you access to the water heater components of the water heater.

During regular use the OFF/ON switch can be left in the OFF position; the water heater will only come on when hot water is requested or when the water is being preheated in comfort mode. Turn the water heater OFF upon the next time you start to use the water heater.



NOTE: Keep this vent clear from all obstructions.

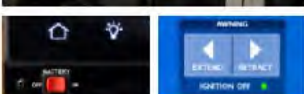
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POWER AWNING

Please refer to the manufacturer's operating instructions for further information.

The awning is located on the passenger side of the roof, this is a 10' x 10' foot electric awning controlled by the switches located on the touch screen control panel. The 12 volt battery disconnect switch must be in the ON position to operate the awning. Touch the mechanical symbol at the bottom of the touch screen control panel. Press and hold the EXTEND button to extend the awning. Press and hold the RETRACT button to retract the awning. The awning is a telescopic support awning with a sensor sensor that will automatically retract the awning in windy conditions.

The awning is equipped with a LED light strip located on the extension rail of the awning. This light strip is controlled by LIGHTING page on the touch screen control panel.



CAUTION: Never leave the awning extended when you are away from your motor home. The sensor sensor will react to windy conditions, however a sudden large gust of wind may not trigger the awning's retract feature before damage occurs.

NOTE: The awning will not operate if the vehicle ignition is in the on position.

AIR CONDITIONER

Your vehicle is equipped with the 11,000 BTU low profile Dometic air conditioner. The controls for the air conditioner are located on HOME page of the touch screen control panel.

(for more information see page 43)



SOLAR PANEL PACKAGE

Your vehicle can be equipped with 95 - 100 watt Command color panels. The solar panels are located over the driver's door and behind the rooftop AC unit. The charge control panel is located above the TV under the rear shelf.

(for more information see page 46)



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EXTERIOR SHOWER COMPARTMENT

Located inside the vehicle fuel fill door, this compartment contains a portable shower head and hot and cold water taps.

NOTE: When unlocking your motorhome be sure to unlatch the cap and the shower hose.



FRIDGE VENTS

Located inside the driver side of the vehicle, these fridge vent covers house the cool side of the fridge, the electrical connections and the pump system. These vents house the clear heat alarm.



FRESH WATER HOLDING TANK FILL

Located behind the passenger side door, this compartment allows you to fill the fresh water holding tank. It also contains the vent tube for your fresh water holding tank.



FURNACE VENT

Located in front of the coach side door, the vent to the water heater, this vent gives off the exhaust of the furnace.

NOTE: Ensure this vent is free and clear of obstructions at all times.



EXTERIOR 110-VOLT PLUG

Located in the passenger side panel behind the rear wheel, this plug will only function if power is supplied through the motorhome generator or shore power. This plug is controlled by the GFI on the driver side information.



PORCH LIGHT

Located on the touch screen control panel next to the main entrance door, touch the PORCH light button to turn ON or OFF the porch light. This button can be in the on position and/or in the LIGHTING page.



12

FAN-FASTIC VENT® FAN

This fan's vent is located on the roof top close to the bathroom door, in the kitchen area of the interior. This fan will assist in exhausting the odors and steam from the bathroom and cooking area. This fan is equipped with a rain sensor. The controls for the fan are located on the mechanical page of the touch screen control panel.

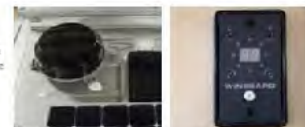
(for more information see page 49)



TV ANTENNA

Located inside the awning on the passenger side near the front of the rooftop, this antenna features a dome enclosure, a booster and a search for frequencies. The control switch for the antenna booster is located above the TV under the rear shelf.

(for more information see page 47)



NON-CAPPED SEWER VENT PIPES

Located on the driver side of the roof above the bathroom, these vent pipes are sealed and connected directly to the black and gray water tanks.



14

MAINTAINING YOUR MOTORHOME

HELPFUL HINTS

- To maintain your exterior painted fiberglass and metal surfaces we suggest you thoroughly clean and wax these pieces regularly. All fiberglass surfaces are painted with automotive paint.
- When storing your Pleasure-Way motorhome it is recommended that you park the vehicle on a level surface. Avoid parking in a front and down position as rain or snow may collect in the air conditioner lines, allowing moisture to enter the vehicle through the air conditioner. Damage to the motorhome as a result of incorrect parking will not be covered under warranty.
- When storing your Pleasure-Way motorhome, ensure all holding tanks are emptied and flushed, the water system is completely drained, including the water heater, the LP gas valve is turned off, the battery disconnect is switched to the OFF position, and all electrical appliances are turned off.
- When storing your Pleasure-Way motorhome it is recommended that you run your vehicle engine once a month to allow the engine starting battery to recharge and the vehicle fluids to flow through the engine. Please refer to your vehicle operation manual for more details.

- It is recommended that you run your generator (if equipped) for 15-20 minutes under load each month. This will allow the system to maintain fresh fuel, the engine to be lubricated and the electronic components to avoid corrosion build-up.
- It is recommended that once a year that you check all seals around the roof components such as antenna, roof vent, plumbing stacks, etc. and side wall items such as furnace vent, fridge vent, etc. of the vehicle.
- It is recommended that you lubricate with a dry lubricate all opening joints, window cranks and slide tracks yearly.



15

ULTRALEATHER CLEANING AND CARE

(Information taken from the Ultrafabrics website.)

Our fabrics are engineered to be long-lasting, with surfaces that maintain their top quality look and feel long after application. To keep any of our materials looking their best, we do recommend regular care and cleaning, especially to keep dirt from accumulating. Below is a general outline to help keep your fabrics looking their best.

INDOOR/OUTDOOR FABRIC CARE INSTRUCTIONS (Information taken from the Ultrafabrics website.)

- All our Indoor/Outdoor products should be stored in a dry, well-ventilated area.
- Our mildew resistant surfaces do not promote mildew growth, however, mildew may grow on dirt and other foreign substances that are not removed from the fabric.
- The frequency of cleaning will vary greatly depending upon the local outdoor environment in which the product is used.
- Cushions should not remain wet or be covered, as this will increase the chances of mildew growth occurring.
- All of our High UV products perform best when they are paired with an open cell, recalcitrant, quick drying foam and/or a waterproof, anti-mildew barrier between the fabric and foam and utilize air vents and/or a mesh open weave fabric bottom.

TIPS

- Clean with soap and water or alcohol based cleaners
- Sanitize using 1-5 bleach/water solution, hydrogen peroxide based, or customary based disinfectants
- For stubborn stains, wipe the stain off with isopropyl (rubbing alcohol) as soon as possible
- Rinse all solution residue with water

ULTRALEATHER PRO STAIN CARE

Restaurant & Food Service	Ketchup, Mayo, Mustard, ** Coffee, Red Wine, Tea
Healthcare	Blood, Urine, Bedside
Contract & High Traffic Areas	Bolspoint Pen Ink **

Clean with soap and water, or alcohol-based cleaners

***This information is not a guarantee. Please use all cleaning and disinfecting agents safely and as instructed.**

****For tough stains, clean using isopropyl/rubbing alcohol. Rub surface with water and dry. Prompt attention is important for successful removal of any stain.**

A variety of eating and accessories may contain dyes that could transfer to lighter colors, depending upon variations in temperature and humidity. Dye transfer is difficult to avoid, not always fully preventable, and may be irreversible.

16

TRAVEL PREPARATION

BEFORE YOU LEAVE

- Don't be heading off on your adventures, you should always stop to ensure that:
 - The LP gas level at the main valve switch
 - All drain and gray waste water tanks are empty, with the drain valves closed
 - All electrical cords and extension hoses are stored back into their respective compartments
 - Gasoline fluid levels are at recommended levels
 - Oil pressure pressure is at recommended levels
 - Oil temperature is within normal
 - All exterior components are secure and closed
 - All interior doors and drawers are closed and latched into position
 - All interior equipment is in the vehicle and is closed
 - The furnace control switch on the thermostat is off
 - The TV swing-out is closed into the stow position
 - The shower door is in the locked position
 - The skylights and vents are in a closed & locked position
 - All optional doors are closed
 - The driver and passenger side seats are in the forward, locked position
 - The contacts are left in either condition than when you arrived
 - The antenna is lowered and rotated to the stow position

WHILE IN MOTION

- While in motion, the refrigerator to operate in DX mode. Use of any other appliance is not recommended while the motorhome is in motion.
- Always wear your seat belt when the vehicle is in motion. Only forward facing seats are equipped with seat belts.

WARNING: Do not use LP appliances while the vehicle is in motion.

UPON ARRIVAL AT YOUR SITE

- Once you arrive at a site:
 - Ensure your motorhome is parked in a level position. Fuel, water components will work at optimum performance (place a bubble level in the refrigerator if the refrigerator is to be a back and leave your unit accordingly)
 - Ensure all exterior vents are clear from obstruction
 - Ensure the black and gray water tanks have been drained. Hook up your 110 volt power cord to your coach and then to the gas receptacle. If supplied at site, a surge protector is recommended.
 - Hook up your fresh water line or the city water, a water connection (if supplied at site) is recommended in green/red city water that you use a pressure regulator
 - Turn the LP gas on
 - Turn the refrigerator switch power to the LP gas selection or 110 volt power (AC)
 - Turn the water heater on
 - Connect sink water (if supplied)

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MOTORHOME SYSTEMS

LIQUID PROPANE GAS SYSTEM

LP appliances are Fridge, Cooktop, Water-Heater and Furnace

Your motorhome is equipped with a Liquid Propane (LP) gas system that provides a fuel source to the appliances. All tanks are designed to use this gas for operation. The storage tank is located under the chassis between the hitch and the front of the LP tank and regulator is found under the vehicle. The regulator is on the driver side generator bracket.

An LP gas regulator must always be installed with the discharge vent facing downward. Regulators that are not in compliance have been equipped with a pressure valve. Make sure that the regulator vent faces downward and that the cover is kept in place to minimize vent leakage that could result in excessive gas exposure, causing fire or explosion. The main propane shut-off switch is located in the driver side utility center.

Propane fill, breather valve and BBO quick connect are located on the driver side rear, exterior corner of the vehicle. The breather valve must be open to fill the propane tank. A gauge will appear through the breather valve when the tank is 60% full. The propane gauge is located inside your coach on the rear electrical switch and display panel. The panel will indicate full or 100% when the LP tank is 80% full.

NOTE: Your LP gas appliances may not light on the first try. There may be air in the LP gas lines that will dissipate as the gas pressure rises the lines.

IF YOU ARE IN GAS

- Extinguish any open flames, candles, lights and all smoking materials
- Do not touch any electrical switches
- Shut off the gas to appliances on the tank valve (BBO supply connection)
- Open all the doors and allow fresh air to circulate
- Leave the area until the odor clears and you are sure there is no longer fuel in the tank
- Have the gas system checked and repaired properly and have it inspected by a professional

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WARNING: Do not bring or store LP gas containers, gasoline or other flammable liquids inside the vehicle because a fire or explosion may result. LP gas containers are equipped with safety devices that relieve excessive pressure by discharging gas into the atmosphere.

WARNING: It is not safe to use cooking appliances for constant heating. Cooking appliances need fresh air for safe operation. Unlike homes, the amount of oxygen supply in the unit is limited due to the size of the vehicle. Proper ventilation when using the cooking appliances will avoid the dangers of asphyxiation, explosion and CO poisoning.

WARNING: Do not use portable fuel burning equipment, including wood and charcoal grills and stoves inside the motorhome. The use of this equipment inside the recreational vehicle may cause fire or asphyxiation.

WARNING: Do not close the cockpit cover or its doors when the cockpit is lit, or when the burner knobs are in the ON position. Allow the cockpit to cool before closing the glass doors.

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FRESHWATER SYSTEMS

The water system built into your motorhome provides full service similar to the system in your home. A 12-volt self-priming pump draws pressurized water from the fresh water tank. A cold faucet and the water heater. An automatic pressure switch located in the water pump maintains a positive line pressure between 20 to 25 psi. The fresh and gray water tanks are located underneath the floor of the vehicle. The black water tank is located underneath the floor directly under the toilet.



FRESH WATER FILL AND DRAIN

To fill the fresh water tank, use the (gray) water fill located on the passenger side of the van inside the sliding door. First, unlock the filler. Fill completely and then pour the large cap. Then pour the water into the fill. Turn on the water to medium flow. Proceed to the next step of knowing when your water tank is full.

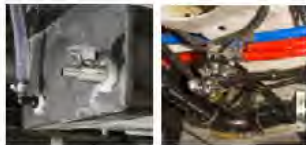
1. If the water pump is not working, make sure the pump is on.
2. When water flows back through the drain fill.



NOTE: If you notice water running out from underneath the van, check the drain tap located on the side of the fresh water tank to ensure the valve is closed. This tap is there to help you drain your fresh water tank.

FRESH WATER SYSTEM DRAINS

The fresh water tank drain is located under the passenger side running board, just under the sliding door. This drain is connected directly to the fresh water tank and will drain you full when the fresh water tank fills the vehicle's hot water. The vehicle's drain pipes will flow from the drain valves. These valves will allow you to drain all the fresh water lines in the vehicle. The low point drains are located below the center of the vehicle in front of the driver side (passenger front spring mount). Access to the valves is gained from under the vehicle, in front of the driver side spring. To use these drains ensure all water taps and the filter valve are in an open position.



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WASTE SYSTEM

The Pressure-Way Ascent is equipped with two waste tanks.

1. A black water tank is located below the toilet above the floor of the vehicle. Only the toilet water and solid waste enter this tank. This tank is approximately 12 gal / 45L.
2. A gray water tank is located in the driver side of the vehicle. This tank holds wastewater from the sinks and the shower. This tank is approximately 16 gal / 60L.



Before using your black water holding tank, aerobate it by adding one (1) gal of water and commercial tank deodorizer through the toilet.

WATER PUMP

The water pump is located in the kitchen in the lower shelf. The inline flow filter is located on the inlet side of the water pump.

If the pump will not prime, ensure:

- there is water in the holding tank
- that the battery is not run down
- the waterlines are tight to the pump and to the filter
- there are no leaks at the inlet fitting and filter (if air is leaking into inlet fittings, tighten fittings or apply clamps as necessary)
- the inline flow filter is clear

If the water pressure drops, ensure that:

- the faucet sensors are clean
- there is water in the holding tank
- the battery is not run down
- the faucets and connections are free of leaks

If the pump runs when there is no apparent demand for water, ensure that:

- there is water in the holding tank
- all faucets and fixtures are shut off and not leaking
- the water lines are free of leaks



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CITY WATER CONNECTION

The city water connection is located in the driver side of the vehicle. The city water connection is a convenient feature when you have access to an outside, pressurized water source. The city water system bypasses the fresh water pump and feeds the water lines directly so that you will not have to use the water pump. When making up the city water connection you should make sure that the water pump switch is turned OFF and all of the water faucets are CLOSED.

1. Close the driver side city water
2. Remove the pump from the city water connection
3. Attach a garden hose to the connection using a rubber washer to ensure the fitting is tight.
4. Turn the water down to its medium pressure.
5. Check for leaks at the city water connection as you may have to re-tighten this connection.

To disconnect the city water system, first turn off the water source, then open a faucet to release some of the pressure in the lines, and then release the water line.

DRAINING THE WATER HOLDING TANKS

1. Open the driver side compartment door on the driver side. This is the driver side water pump door. Press in the black or gray drain valve to allow the water to drain. Remove the black termination cap.
2. Locate the driver side in its compartment, under the running board, next to the camp outlet. Connect the upper hose to the drain outlet, and get the opposite end into an appropriate sewer dump outlet.

NOTE: Dump your black water first to allow your gray water to flush the black water through the hose.

3. Open the termination valve on the black water holding tank (black hose). Once the tank is empty, open the gray water holding tank (gray hose). A garden hose may be left running into the sewer with the other hoses. Turn on the black and gray hoses.
4. Close the termination valves and replace the cap. Rinse and replace your hoses back to their proper place.
5. Disconnect the empty tank by adding one (1) gal of water and mix with compressed air to help the tank empty through the hose.



NOTE: It is advisable to use a water pressure regulator because excessive pressure may result in water line damage.



NOTE: If the black water holding tank is allowed to overflow, the overflow may back up through the toilet drain. If the gray water tank is allowed to overflow, the overflow may back up through the shower drain.

NOTE: If you are using a sewer hookup in a RV park, keep the hose closed until the holding tank is at least partially full, then drain. The large quantity of waste flow will provide more effective drainage and reduce tank stoppages.

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TOILET

Please refer to the manufacturer's operating instructions for further information.

TOILET TROUBLE SHOOTING:

Water keeps running in the bowl:

check to see if the float lever is all the way up. Sticking may be caused by foreign material on the waste valve plunger rod at the bottom of the toilet bowl. If the problem persists, you may need to replace the water valve.

The toilet leaks and there is water on the floor:

If the leak is at the back of the toilet, check the water supply line connection and refer to the manufacturer's installation instructions. If the leak is at the toilet flange area (where the toilet mounts to the floor), check the toilet flange nuts and tighten them if necessary.

Flush pressure: the lever must be held fully down during the flush. An adequate flush should be obtained within 2 to 3 seconds. If the problem persists, remove the water supply line and check the water supply. The water supply rate should be at least 10 l/min / 2.5-3.0 gal per minute to ensure an adequate flush.

KITCHEN FAUCET (Danco 100 52132-CHP)

With the faucet handle in the off position the faucet may continue to drip for a short period of time when the vehicle is moved. Water is retained in the faucet spout.



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WINTERIZING THE WATER SYSTEMS

-

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- Fully charge your engine starting and once battery is fully charged.
- Turn OFF the charge line disconnect switch (red key).
- Turn OFF the 12V battery disconnect switch on the exterior fender (see section 4.10 for details).
- On the Mercedes-Benz Sprinter motorhome, you can disconnect the engine starting battery by removing the battery cable from the post next to the accelerator pedal.
- It is recommended that you start and run your vehicle to short period of time each month.
- It is recommended that you start and run your generator under load for at least 1 hour per month.
- It is recommended that the bridge draw be left slightly open to allow an air duct through the bridge cable during a storm period.
- It is recommended that the vehicle be driven or moved various of backroad if possible, to avoid for clogging of the vehicle tires.
- If the motorhome chassis has not been changed if the interior of the coach is added (heating, DTV, or A/C).



- Turn OFF the 9V battery's power switch on the battery touch screen and wait 10 seconds.
- Turn OFF the IP Switch.
- Start the generator by selecting ON/START on the touch screen (control panel).
- Once the generator is running and generating power, search the inverter display, since the display will have generated an error if a generator is running. If the alarm functions in inverter, this inverter shuts the generator down. Use the generator (generator for a week) before for when the alarm of the inverter is being tested. (OFF 0.0)



-

Open the kitchen, exterior shower and bathroom one at a time allowing the air to flow through both the inlet and the outlet pipes. Upon the test valve only allow air to flow into the toilet bowl. Turn off the water pump and disconnect the air in hose. Reconnect the (green) fresh water supply fitting.



- $\bar{r}_{100}$
- steps above
- ± 1.6

7. Open all three low-pressure drain valves in the kitchen and noted above.
8. Connect a flow meter to the city water line. Connect a pressure gauge to source.
9. Open each faucet, bathroom, kitchen, exterior shower and toilet, both hot and cold. Allow the air to slow the "ground" water out of the lines and valves. Fully drain the system. Leave all faucets, toilet valves and shower valves in an open position.
10. Hear it out of the main line. If a water leak is present, stop

The motorhome's living area, electrical system, and great convenience, it is capable of supplying the vehicle with at least two sources of power. The 12 volt DC power and 110-120 volt AC power. The 12 volt coach battery supplies power to the interior components, except the roof air conditioner and microwave oven. AC for short term use, the 12 Volt of DC power supplies an AC 110-120 volt current to the motor plug outlets. The entire coach is covered and the microwave is built into the 2000 watt pure sine wave inverter.

The scooter battery is charged when the engine is running and the lights are disconnected (and it's not the OEM) because of a voltage drop across the 12 V (16-12V) full power source. This voltage is generated with the 12 volt battery. Disconnect switch in the OEM scooter. Your vehicle may also be equipped with a solar panel. This solar panel will charge the lead battery. If the charge line is disconnected (and it's not the OEM) position, for long-term use, you will require a power supply plugging into a 120 V (120 volt) power source with the supplied 25 foot power cable. This 25 foot power cable supplied with your scooter must be connected and locked to your scooter and the 120 V (120 volt) power source (a 30 amp outlet is recommended). This will supply 120 V (120 volt) power throughout the interior and supply power through a power converter to all 12 volt components.

12 VOLT OR DC EQUIPMENT
Trailer battery (optional)
Trailer hitch
Slide controller
115V/10 amp
Refrigerator (when on 115V or DC)
Water heater
Fluorescent
Water pump
Trailer air and auxiliary coach lights
TV antenna
CD / Cassette player
Carpeted floor
Power windows
Fan-to-plate / Vent Fan
Fridge / freezer

Do not run the air conditioner unless you are plugged into a minimum 20-amp power source.

Your minichain is equipped with a 110-120/117 volt $\pm 5\%$ amp power converter. The charging portion of the converter is specific to the lithium batteries. The converter's function is to take part of the 110-120 volt current, that is received when the motorhome is plugged into an external power source or the generator is running, and convert it to DC or 17 volt power.

your motorhome is also equipped with a 2000 watt Pure-sine wave inverter. The Pure-sine wave inverter takes the 120 volt AC power from your batteries and converts it to 110-120 volt AC power. The inverter will enable you to use your 110-120 volt plug outlets, entertainment center and microwave oven when a shore power source or generator source is unavailable. The power output is limited by the state of charge of your batteries and by the amount of current drawn by each appliance. The inverter has a built in transfer switch that allows the 110-120 volt power to bypass the inverter and power the 110-120 volt plug outlets, entertainment center and microwave directly, when it is not in use or is supplied with shore power, such as when you are connected to the electrical grid.

110-120 VOLT OR AC EQUIPMENT
TV and Stereo plug-in: When connected to a 110-120 volt power source
110 Volt plug: When on a generator or direct power source
Microsaw when on a generator or direct power source
Refrigerator: 110 AC
Air conditioner

NOTE: All dash components including the in-dash radio and front map lights are powered through the starting/chase/battery. Prolonged use of these items when the vehicle is not running will deplete the engine starting battery.

AC 110-120 VOLT POWER

The 25-foot, 30-amp power cord is provided with your vehicle. To activate all power sources, connect and lock the power cord to your coach in the driver side utility center and to an adequate 110-120 volt power source. The power cord and connections are rated for 30-amp 110-120 volts. Most RV parks are equipped with 30-amp outlets. Remember to always attach the power cord to your coach first, and then to the power source.

NOTE: The male end of the power cord is a 30-amp style plug, therefore, you may require an adapter to connect the plug into a 15-amp style plug or a 50-amp style plug.

WARNING: Ensure the power source for your vehicle is a 110-120 volt power source. A higher voltage or lower voltage outlet could do damage to your coach.

AUTOMATIC TRANSFER SWITCH

Please refer to the manufacturer's operating instructions for further information.

The automatic transfer switch is located under the rear sofa on the driver side wall panel. To access the transfer switch open the driver side rear door of the vehicle.

The automatic transfer switch will only allow you to switch power from one source to the generator or the shore power cord. This is a safety feature of the vehicle.

INVERTER

Please refer to the manufacturer's operating instructions for further information.

Your vehicle is equipped with the Freedom X 2000 watt Pure-Sine Wave Inverter located behind the passenger side aft window cushion. This inverter provides 17,000 VA power output. To 110-120 volt AC power for the microwave, entertainment equipment, and AC outlets in and outside the coach. The inverter will be limited by the value of charge of the coach batteries and temperature draw from all vehicle appliances. To ensure all power for the inverter is kept clear of its usage.

The Pure-Sine Wave Inverter has an automatic transfer switch built into its built-in unit and on shore power. In generator power, it bypasses the inverter. Therefore, it will allow 30-amp, 110-120 volt AC power if it is in motion and not load is being drawn from the inverter. If no load is on the inverter, it will turn itself off after 20 hours of continual operation.

The inverter is powered by the large red lead acid battery in the battery compartment. There is also a 250-amp surge fuse in the system to protect the inverter and the coach.



NOTE: Connect and lock the power cord to your coach first and then the external power source.



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GROUND OUTLETS

A ground fault circuit interrupter (GFCI) 110-volt receptacle is located on the lower driver side aft window protection against all 30 ground electrical break hazards that could be harmful or even fatal. This outlet shall be an outlet and not a standard outlet. It is a break receptacle. The GFCI receptacle must be tested at least once a month in accordance with the manufacturer's instructions.

The GFCI for the stove is found on the driver side aft window protection. The LP/GD gas cooktop. The GFCI for the microwave is found in the cabinet above the Battery Shifter.

NOTE: The coach's wires are powered to test or reset the GFCI. Check the GFCI for the individual appliance or plug which if the appliance is not operational.

DC LOAD CENTER

This load center is located in the cabinet below the driver side aft window cushion. This DC load center contains all the multi-circuit wiring systems and the radio screen control panel. This load center also has receptacle breakers for the various components.

Please refer to the manufacturer's operating instructions for further information.



12 VOLT BATTERY DISCONNECT

The 12-volt battery disconnect switch is located by the battery compartment on the lower driver side aft window. The disconnect switch will stop all 12-volt power supplied to your motorhome from the coach batteries.

NOTE: If your vehicle is going to be parked and not in use for longer than a 48-hour period, turn this switch to the OFF position as the LP/GD detector is hard wired into the coach batteries and will eventually drain the batteries.



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INVERTER / DISPLAY CONTROL PANEL

This control panel is located on the kitchen island and panel next to the power door on control panel.

This control panel will turn the inverter ON or OFF. The 12-volt battery disconnect switch is located in the driver side aft window. It is not to be used to turn the inverter ON or OFF. Always ensure the inverter is in the OFF position when not in use. The inverter can only be used from your battery while in the ON position while not in use.

When plugged into shore power or running the generator, the inverter will turn ON and the display light on the control panel will be green.

NOTE: To turn the inverter ON or OFF you must press and hold the power button on the inverter control panel for at least 1 second.



AC ELECTRICAL DISTRIBUTION PANEL

The Freedom X 2000 is equipped with an AC distribution panel that houses the breakers for the 110-120 volt system. The distribution panel is located in the driver side aft window. The breakers will act like a household breaker, you must ensure the breakers are shut all the way off before you can reset the breaker.



- 1. 20 Amp Inverter Input
- 2. 20 Amp AC On/Off Key
- 3. 15 Amp Breaker
- 4. 15 Amp Breaker (GFCI Protected)
- 5. 30 Amp Breaker Panel
- 6. 20 Amp Inverter Output
- 7. 15 Amp Breaker (GFCI Protected)
- 8. 15 Amp Breaker (GFCI Protected)

DC BREAKERS FOR THE CONVERTER/CHARGER AND GENERATOR

There are two DC breakers located in the DC load center. The 150-amp DC breaker protects the converter/charger input to the coach batteries. The 150-amp breaker will also protect the coach battery input to the DC load center. The 80-amp generator breaker disconnects the coach battery feed to the generator for the generator starter and generator fuel pump.

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CHARGE LINE DISCONNECT

The charge line disconnect switch (red key) is located above the battery box. Access is through the driver side rear door.

The charge line disconnect switch (red key) controls the charge line from the engine alternator and only powers the coach batteries. When the switch is ON, the coach batteries will charge from the engine alternator and solar panels. When the switch is OFF, the coach batteries will NOT charge from the engine alternator and solar panels. This disconnect switch is used for stopping the charge and forcing conditions. This switch should be used during battery servicing.

ON Position: red key is locked into the switch.
OFF Position: red key can be removed from the switch.



CONVERTER/CHARGER AND OUTPUT FUSES

Please refer to the manufacturer's operating instructions for further information.

Progressive Dynamics Lithium Converter/Charger model P145AL.

This converter/charger can be used with the lithium battery box. The lithium battery charges at a high amp-percentage and the converter is designed for this purpose.

It is located under the power sofa on the passenger side. Access to the converter/charger is through the passenger side rear door of the vehicle. Remove the floor plate battery cover and pull the silver access panel at the top near the battery box. There are two 30-amp blade fuses in the converter.

The converter takes 110-volt power and converts it to operate the 12-volt system. This happens while plugged into shore power or upon plug off of the power cord. The converter is plugged into a 110-volt power outlet under the power sofa. The converter also has a battery monitor built in that is capable of monitoring battery charging. This battery charger only charges the lithium battery.

NOTE: The converter fuses will blow if the coach battery is hooked up with reverse polarity.

NOTE: The fan on the converter will only operate once the converter reaches a designated temperature.

WARNING: Do not work on the converter with the vehicle running, generator running or the vehicle plugged into shore power. Ensure the charge line disconnect is off.



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TOUCH SCREEN CONTROL PANEL

Please refer to the touch screen control panel manual for further information.

Your motorhome is equipped with two touch screen control panels. They are located on the kitchen and panel next to the entrance and above the entertainment center in the rear lounge/bed area. Both touch screen control panels control the living area functions of the motor home.

The menu buttons are located at the bottom of the screen. There are four menu buttons to choose from: HOME, LIGHTS, MEDIA/AC and SETTINGS.

LIGHTS

Each lighting area has its own button in the LIGHTS page. Buttons with arrows next to the light bulb icon are equipped with dimmers. Touch and hold the button to brighten or dim the light for color area.

REAL TIME LOSS/GAIN METER

The meter gives you the amperage draw of the components that you are using at any given time. It takes into consideration gain from the solar panel and other items that may be charging your batteries.

BATTERY METER

The battery voltage is for the coach batteries. The battery voltage will vary depending on the load being drawn and the state of charge. For example when the motorhome is being used with the engine the voltage will drop and then return to a normal reading once the motorhome is shut off.



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If you have power from shore power (cable plug), but not from your generator.

1. Ensure the breaker on the generator is not tripped.

If you have power from your generator, but not from shore power.

2. Check your shore power source.

3. Ensure your automatic transfer switch is tripping and reset the automatic transfer switch using a reset button that are along loaded. (In occasion there panels are not always power under, two methods to reset it. One automatic transfer switch working properly and

Method 1: START the generator. Wait for power in your motorhome to be engaged by the generator and then STOP the generator. Now plug your power cord into a 110-120 volt electrical outlet. You may have to reset the method a few times. Always ensure that you unplug your power cord before starting your generator.

Method 2: STOP the generator and unplug your motorhome from shore power. Locate a screwdriver to open the automatic transfer switch. Move the control panel back and forth making sure they have free movement. Check for debris between the points.

NOTE: if an individual appliance is not working ensure that the appliance is plugged in, check the breaker and GFI for the individual appliances.

CHASSIS BATTERY

Please refer to the Mercedes-Benz Sprinter manual for maintaining and recharging the chassis battery.

The chassis (engine starting) battery is located below the driver's foot board in the cab area of the vehicle. The chassis battery and the coach batteries are separated by the Mercedes-Benz battery system located under the driver's seat.

NOTE: the chassis battery is only charged through the alternator when the engine is running. The converter/charger will not charge the chassis battery.



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TROUBLE SHOOTING THE DC/12 VOLT SYSTEM

1. Ensure the 12 volt battery disconnect is in the ON position.
2. Ensure there is 12 volt power from the coach battery (check battery voltage or start the vehicle engine).
3. Ensure the converter/charger is plugged into the wall outlet.
4. Ensure the 30 amp fuses on the converter/charger are good.
5. Ensure the converter/charger breaker is not tripped in the AC breaker panel.
6. To reset the multiplex wiring control system for the coach (this includes all switches and controls), unplug the vehicle from shore power or shut off the generator. Turn off the 12 volt battery disconnect switch and allow the system to do a complete shutdown (this will only take a couple of minutes). Turn on the 12 volt battery disconnect switch and the system will be reset.



TROUBLE SHOOTING THE AC POWER

1. Ensure you have a reliable power source to plug your power cord into. Ensure your power cord is properly attached to your motorhome. Test the outlet with another appliance. Ensure your power cord is properly attached to your motorhome.
2. Ensure that the GFI has not been tripped. Press the TEST button and then reset the GFI.
3. Ensure the breakers in your distribution panel have not been tripped.



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CHASSIS BATTERY DISCONNECT

This disconnect is located next to the generator in the driver cabin. To disconnect the chassis battery, press the red kill and remove the battery cable from the post.



COACH BATTERIES

ECO-ION EARTH SMART LITHIUM IRON PHOSPHATE (LiFePO₄) (2 x 100 Ah) Your motorhome is equipped with two coach batteries located under the passenger floor. These Eco-Ion Earth Smart batteries consist of pure lithium iron phosphate (LiFePO₄) technology. Lithium iron phosphate battery chemistry is one of the best on the market today. Lithium batteries are different than lead-acid batteries. A lithium battery's voltage remains relatively constant while discharging, while voltage for a lead-acid battery decreases. A lithium battery can use 100% of its storage capability (measured as amp hours) while a lead-acid battery typically only uses 50%. Lithium batteries power level will not drop-off and it will last longer. But when the lithium battery runs out of power it does so abruptly.

Access to the coach batteries is through the rear door. The batteries are located under the power seat.

1. Remove the Eco-Ion power panel (17930003) (2 not 1) magnets.
2. Turn the Eco-Ion power panel 180 degrees to the Battery Box.

WARNING: Do not work on the batteries with the vehicle running, generator running or the vehicle plugged into shore power.

BATTERY MANAGEMENT SYSTEM

The Eco-Ion Earth Smart batteries feature a built-in battery management system (BMS). The BMS automatically provides:

- Short circuit protection
- Low voltage protection
- Cell balancing
- Discharge protection
- Temperature protection



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CHARGING

The charging system is equipped with a converter that includes a built-in lithium charge controller. Both lithium batteries are fused with 50 amp fuses for the protection of your coach and the battery system. These fuses are located on top of the battery area and at the charging source.

There are three charging sources for the coach batteries:

ENGINE ALTERNATOR:

The engine alternator will charge the coach batteries when the engine is running. The alternator is located in the front of the coach and is connected to the battery system.

SOLAR PANELS (optional feature):

The solar panels will charge the coach batteries through the solar controller when the charge line is disconnected (4-40 amp) and the ON position. The charging source is protected by a 30 amp fuse located next to the charge line disconnect.

CONVERTER/CHARGER (via shore power and generator):

This converter/charger will charge the coach batteries when the motorhome is connected to a 120V/240V power source (shore power) or when the generator is running. The 12 volt battery disconnect switch is not in the ON position. The charging source is protected by the 50 amp disconnect breaker and a 50 amp fuse located above the batteries (optional feature).

This converter/charger only to be used with the lithium batteries. The lithium batteries charge at a high amperage rate and the converter/charger is designed for this purpose. When fully charged the BMS will turn the batteries off to prevent overcharge. Typically, battery voltage displayed on the control panel with a voltage of 12.6 Volts indicates fully charged. You may notice on your solar controller (if equipped) the solar input screen may be flashing LO power, so this also indicates the batteries are fully charged.



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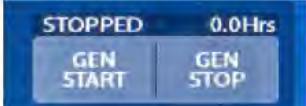
GENERATOR

Your unit is equipped with a generator. It will be located at the rear of the vehicle. Access to the generator is from the rear of the vehicle. The generator is located in the rear of the vehicle and is connected to the battery system. The generator will provide an added source of power to run the electrical system when you are not plugged into 110 volt shore power. To start your generator, locate the START/STOP switch on the generator control panel. Press the START button until the generator starts. It may take a few seconds initially to start. Your generator is an LP generator that draws its fuel supply from your LP tank. Ensure the LP valve is open before starting the generator. Once the generator is running, it supplies power to the entire electrical system, just as if you were plugged into a 110 volt power source.

NOTE: For your safety and protection, all generator or generator-ready units are equipped with an automatic transfer switch that will allow your coach to receive power from either shore power or your generator.

NOTE: It is recommended that you run your generator (if equipped) for 15 hours under load each month. This will allow the system to maintain proper fuel, the engine to be lubricated and the electronic components to avoid corrosive build-up.

NOTE: If you are running your generator in freezing temperatures and the interior of the coach is below 32 degrees Fahrenheit, it is recommended that the 150 amp disconnect breaker is tripped to avoid charging the batteries through the converter/charger. In some cases, owners will use the furnace to warm the interior of the coach and allow the batteries to charge. Press the red button on the breaker to trip the breaker. When the breaker is tripped a lever will swing out below the control bar, insert the breaker push the lever up under the control bar.



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NOTE: The chassis and coach batteries are separated by the Mercedes-Benz battery system located under the chassis seat. This system will only engage when the vehicle is running in order to charge the coach batteries from the engine alternator.

WARNING: Do not charge your batteries below 32 degrees Fahrenheit. Charging the batteries when below these conditions may cause damage to the lithium cells and shorten the lifespan of the batteries. If you are using your coach in freezing temperatures turn the charge line disconnect switch OFF. This will disconnect the engine alternator and solar panels from charging the coach batteries. The coach batteries will continue to discharge and power your coach as normal in conditions up to -20°C (-4°F).

STORAGE

When placing your vehicle into storage always ensure your coach batteries are fully charged and the 12 volt battery disconnect switch is in the OFF position. To extend the life of your lithium batteries it is recommended that the battery be fully charged and kept above freezing temperatures when in storage. This may involve removing the lithium batteries from the motorhome and storing them in a temperature-controlled environment.

WARNING: The OEM batteries can only be replaced with identical lithium batteries. The charging system is not designed for replacement with Lead Acid, Gel, AGM, etc. battery may result in damage to the vehicle, coach, batteries and electrical system. These damages may result in a thermal incident such as fire, electrical short, melting, off gassing, etc.

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AUTOMATIC GENERATOR START

The automatic generator start can be used to engage the coach batteries and/or for shore power in your coach.

NOTE: To operate the generator on the Ascent the propane switch must be on.

Touch the AGS button to enable the AUTO GEN START. The screen display will appear with the following instructions:

AUTO GEN START will not engage if you do not cycle the generator to the run position within the allotted time or if you touch CANCEL on the screen. The generator should only remain in the run position for less than 30 seconds otherwise the AUTO GEN START will be disabled.

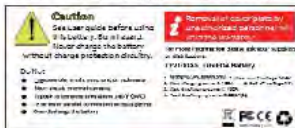
Touch the SETTINGS button to set the parameters for AUTO GEN START. Once you touch the setting button you will have a choice between EASY SETUP or MANUAL SETUP. Touch the EASY SETUP button to go to the next screen.

Touch EASY SET UP for a quick set up of the generator parameters. STARTING THE GENERATOR: The first screen display will ask when you want the generator to start. Touch the button to check or uncheck the reason to enable. Touch the next button to move to the next screen.

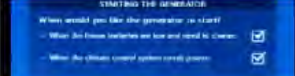
STARTING CONDITIONS FOR LOW BATTERY: This screen will enable you to set the voltage at the point of time when the generator will start. If you want your generator to start, the generator will start when the voltage is low. Touch the next button to move to the next screen.

GENERATOR RUN LIMITS: This screen will enable you to set the parameters for run time for the generator. Once the air conditioner has brought the coach down to the desired temperature and cycled off the generator should maintain a minimum of 15 minutes. It will also allow you to set the maximum run time for the generator.

Please note the warning symbols for all batteries.



WARNING: Do not use the automatic generator start if you are plugged into shore power or if you are in an area where running the generator is prohibited.



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STOPPING CONDITIONS FOR LOW BATTERY

This screen will enable you to set the parameters for the battery charging system. You will be able to set the desired charge voltage as well as the amount of time that the battery has to hold the voltage before the generator will shut down. Change the settings by touching the + and - buttons. Touch the NEXT button to move to the next screen.

QUIET TIME SETTINGS

Touch the back in the right hand screen to enable or disable quiet time settings.

Quiet time settings allow you to determine when the generator will be allowed to run.

Select ON in the top right button to enable or disable a battery top up and before the system goes into quiet time settings.

Touch FINISH to complete the programming for easy set up.

Touch MANUAL SET UP for a more in depth setup screen.

START (REQUIRED)

Touch the Battery voltage or HVAC leads to turn on the required inputs for your generator. The battery will be on right away when it is turned on.

Select QUIET TIME to set the parameters for the quiet time settings. Change the settings by touching the + and - buttons.

STARTING

Change the settings of battery voltage, relay # the generator fails to start and number of restart tries.

RUNNING

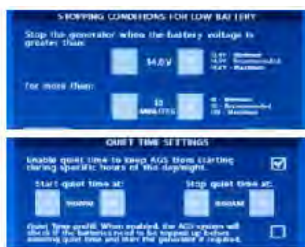
Set the low battery voltage for running of the generator. Also adjust the HVLS settings.

STOPPING

Set the voltage disconnect and the amount of time the battery remains at just voltage before the generator will shut off. This applies to the low battery voltage setting.

Both the LOW BATTERY VOLTAGE and the HVAC LOADS are adjustable which allow the user to set the most run time to acquire the desired result and to service the other settings.

NOTE: The Automatic Generator Start for use of the HVAC system (Air Conditioning or Heating). The appliance must be selected on the main screen, the temperature must be selected and set on the main screen and the fan on the main screen should be set to Fan Auto.



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WATER HEATER

The water heater is located under the fridge next to the furnace vent.

(For more information see page 22)

(For Air conditioning instructions see page 22)



MICROWAVE

Please refer to the manufacturer's operating instructions for further information.

Your microwave oven operates off of 120 volt AC power only. To use your microwave you must be plugged into shore power, have the generator operating, or use the 200V inverter.

NOTE: You will not be able to run your microwave oven at the same time as your roof top air conditioner if you are running on generator power.



AIR CONDITIONER

Please refer to the manufacturer's operating instructions for further information.

Your vehicle is equipped with the 12,000 BTU Low profile Portable air conditioner. From the ground to the top of the air conditioner it measures 9' 11". This is the highest point on your vehicle. Ensure you allow for the clearance when proceeding under over sized items. The controls for the air conditioner are located on the COM page of the touch screen control panel. Choose A/C on the touch screen control panel, set the thermostat temperature and the fan speed for your comfort. If you wish for the A/C to cycle on and off choose auto for it to run speed. By choosing fan LOW or HIGH the fan will continue to run and you will not cycle on and off.

NOTE: When running the A/C in high heat or high humidity it is recommended the fan speed be set to HIGH. This will help avoid condenser freeze up.



FAN-TASTIC VENT™ FAN

Please refer to the manufacturer's operating instructions for further information.

The fan's vent is located on the roof-top near the shower skylight and close to the bathroom door in the kitchen area of the interior. This fan will assist in exhausting the odors and steam from the bathroom and cooking area. The fan is equipped with a rain sensor.



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MOTORHOME INTERIOR

INTERIOR COCKPIT MAP LIGHT

This is the Mercedes-Benz Sprinter map light system. Please follow the vehicle manufacturer's instructions for operating procedures. This light is powered by the chassis (engine starting) battery and prolonged use will deplete the engine starting battery.



USB CHARGING PORT

Your motorhome is equipped with USB charging ports. The driver and passenger side of the bottom seat feature a USB charging port. Each charging port features 2 USB ports that will fit a USB type-A connector. The 12 volt battery disconnect switch must be ON for power to the USB ports. The USB ports are protected by a resettable breaker found on the DC and Monitor.



COOKTOP

Your vehicle is equipped with a three-burner flush mount cooktop located in the kitchen counter top.

(For more information see page 20)



FURNACE

Your motorhome is equipped with a 16,000 BTU forced air gas Auxiliary Furnace. The furnace is located near the front below the fridge. The thermostat system is located on the touch screen control panel.

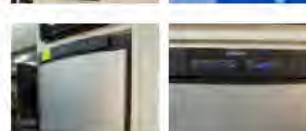
(For more information see page 20)



REFRIGERATOR

Your vehicle is equipped with a 12 volt two way fridge / freezer (12 volt, AC & DC). Please refer to the tags marked included with your vehicle for more information.

(For more information see page 20)



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The controls for the fan are located on the touch screen control panel on the MENU/HELP page. To open and close the fan, touch the FAN UP or FAN DOWN button on the touch screen control panel.

Select the FAN button to start the fan.



(This fan is an exhaust fan used to draw air out of the coach. The fan is also powered by the three-burner. Ensure the fan is not used if the thermostat is higher than the inside temperature. To turn the fan on, touch the fan on button. To turn the fan off, touch the fan off button.)

NOTE: The fan is equipped with a rain sensor so the fan cannot be operated when it is raining. The fan cannot be operated when the fan lid is closed.



SOLAR PANEL PACKAGE

Please refer to the manufacturer's operating instructions for further information.

Your vehicle can be equipped with 68 watts to 236 watt solar panel package located on the top of the roof. The Go Power solar panel charge controller is located above the TV.

The solar panel shows "BATTERY VOLTAGE", "CHARGE", and "AC/DC" status. To scroll through the modes press the B button (the solar panel control) or simply touch the B button as this is the easiest charge cycle to the lithium charge system.

The solar panel will charge the coach batteries even when the 12 volt battery disconnect is in the OFF position.

To prevent the solar panel from a spring load battery you must turn OFF the charge line disconnect red cap.

NOTE: Ensure the solar panels are clean for optimal charging output.

CAUTION: To ensure you solar panels are not active when servicing the batteries it is advised to cover the solar panels.

CAUTION: Turn OFF the charge line disconnect if the vehicle is going to be in storage for a period of time or in similar freezing conditions without internal heat.



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TV AND BLU-RAY

Your motorhome is equipped with TV and Blu-ray/DVD components. You will find these located in the entertainment center. These components are powered by a 110 volt power source (inverter, shore power or generator).

NOTE: Your Blu-Ray player is a player only as it will not record. To play a CD or MP3 the TV flat screen must be in the on position.

COMPONENTS:

1. 24" Flat Screen Monitor
2. Blu-ray/DVD player
3. Antenna with booster

12 VOLT OR DC OPERATION

1. Turn the inverter ON. Ensure the TV and Blu-ray player are plugged into the wall outlet located above the Blu-ray player (TV is required).
2. Turn the antenna booster ON by pressing the back button on the antenna booster. Press the search button.
3. Turn the TV ON and select DTV-TV using the input button on your TV or remote.
4. Using the menu button select - TV > Channel > Scan Channel. This will bring in all local air channels.
5. For Cable TV connect a cable extension cord from the cable hookup in the component compartment to the cable cable outlet. Turn the TV antenna booster OFF. Follow step (4) for auto programming.
6. For Blu-ray operation turn ON the Blu-ray player. Using the source button on the TV or TV remote, select - DVD/1. Insert a DVD or Blu-ray disc and press the disc to load and press play.

120 VOLT OR A/C OPERATION

When using generator or shore power switch the inverter OFF. Use the same programming procedures as the 12 volt operation.

NOTE: To save power while watching TV ensure the Blu-ray player is switched off. Only turn your Blu-ray player on when in use.



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KITCHEN COUNTERTOP EXTENSION (X2)

Lift the extension until it locks into the full upright position. To fold down the extension, press the locking latches on the end of the extension arm.

NOTE: The counter extension has a weight limitation and should not be used for heavy items.

TABLE

1. Remove the table and table leg from behind the driver seat or from below the TV by unlatching the latches.
2. Insert the T-rod of the table pole into the table base.
3. Turn the table pole clockwise until it is tight and locked into place.
4. Press the table down onto the table pole.



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BED LAYOUT

1. To recline power seats, select the MECHANICAL page on the touch screen control panel and hold the EXTEND button until the seats are reclined.



2. Remove the head boards from behind the driver seat.
3. Place the two bed boards on the bottom rails.



4. Place the mattress backrest in between the bed cushions.



JACK AND JACK TOOLS

The jack and jack tools are located on the passenger floor area of the Sprinter cab. The jack and jack tools are provided by Mercedes-Benz. Please refer to the Mercedes-Benz owner's manual for jacking locations.

NOTE: There is no spare tire included with this vehicle. For your convenience a flat repair kit that includes a tire repair fluids and an air compressor has been provided under the rear seats against the outside wall.



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TIRE SAFETY



The following information has been acquired from the NHTSA website.

EVERYTHING RIDES ON IT

Studies of tire safety show that maintaining proper tire pressure, observing tire and vehicle load limits (not carrying more weight in your vehicle than your tires or vehicle can safely handle), avoiding road hazards, and inspecting a tire for cuts, slashes, and other irregularities are the most important things you can do to avoid tire failure, such as tread separation or blowout and flat tires. These actions, along with other care and maintenance activities, can also:

- Improve vehicle handling
- Help protect you and others from avoidable breakdowns and accidents
- Improve fuel economy
- Increase the life of your tires
- This booklet presents a comprehensive overview of tire safety, including information on the following topics:
- Basic tire maintenance
- Uniform Tire Quality Grading System
- Fundamental characteristics of tires
- Tire safety tips

Use this information to make tire safety a regular part of your vehicle maintenance routine. Recognize that the time you spend to minimal compared with the inconvenience and safety consequences of a flat tire or other tire failure.

SAFETY FIRST-BASIC TIRE MAINTENANCE

Properly maintained tires improve the steering, stopping, traction, and load-carrying capability of your vehicle. Under-inflated tires and overloaded vehicles are a major cause of tire failure.

Therefore, as mentioned above, to avoid flat tires and other types of tire failure, you should maintain proper tire pressure, observe tire and vehicle load limits, avoid road hazards, and regularly inspect your tires.

FINDING YOUR VEHICLE'S RECOMMENDED TIRE PRESSURE AND LOAD LIMITS

Tire information placards and vehicle certification labels contain information on tire and load limits. These labels indicate the vehicle manufacturer's information including:

- Recommended tire size
- Recommended tire inflation pressure
- Vehicle capacity weight (GVW) - the maximum occupant and cargo weight a vehicle is designed to carry
- Front and rear gross axle weight ratings (GAWR) - the maximum weight the axle systems are designed to carry.
- Tire placards and certification labels are permanently attached to the vehicle door edge, door post, glove box door, or inside of the trunk lid. You can also find the recommended tire pressure and load limit for your vehicle in the vehicle owner's manual.

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UNDERSTANDING TIRE PRESSURE AND LOAD LIMITS

Tire inflation pressure is the level of air in the tire that provides it with load-carrying capacity and affects the overall performance of the vehicle. The tire inflation pressure is a number that indicates the amount of air pressure - measured in pounds per square inch (psi) - a tire requires to be properly inflated. (You will also find this number on the vehicle information placard expressed in kilopascals (kPa), which is the metric measure used internationally.)

Manufacturers of passenger vehicles and light trucks determine this number based on the vehicle's design load limit, that is, the greatest amount of weight a vehicle can safely carry and the vehicle's tire size. The proper tire pressure for your vehicle is referred to as the "recommended cold inflation pressure." (As you will read below, it is difficult to obtain the recommended tire pressure if you tires are not cold.)

Because tires are designed to be used on more than one type of vehicle, tire manufacturers list the "maximum permissible inflation pressure" on the tire sidewall. This number is the greatest amount of air pressure a tire should ever be put in the tire under normal driving conditions.

CHECKING TIRE PRESSURE

It is important to check your vehicle's tire pressure at least once a month for the following reasons:

Most tires may naturally lose air over time.

Tires can lose air suddenly if you drive over a pothole or other object or if you strike the curb when parking.

With radial tires, it is usually not possible to determine under-inflation by visual inspection.

For convenience, purchase a tire pressure gauge to keep in your vehicle. Gauges can be purchased at tire dealerships, auto supply stores, and other retail outlets.

The recommended tire inflation pressure that vehicle manufacturers provide reflects the proper psi when a tire is cold. The term cold does not relate to the outside temperature. Rather, a cold tire is one that has not been driven on for at least three hours. When you drive, your tires get warmer, causing the air pressure within them to increase. Therefore, to get an accurate tire pressure reading, you must measure tire pressure when the tires are cold or compensate for the extra pressure in warm tires.

STEPS FOR MAINTAINING PROPER TIRE PRESSURE

1. Locate the recommended tire pressure on the vehicle's tire information placard, certification label, or in the owner's manual.
2. Record the tire pressure of all tires.
3. If the tire pressure is too high in any of the tires, slowly depress air by gently pressing on the tire valve stem with the edge of your tire gauge until you get to the correct pressure.
4. If the tire pressure is too low, note the difference between the measured tire pressure and the correct tire pressure. These "missing" pounds of pressure are what you will need to add.
5. At a service station, add the missing pounds of air pressure to each tire that is under-inflated.
6. Check all the tires to make sure they have the same air pressure (except in cases in which the front and rear tires are supposed to have different amounts of pressure).

If you have been driving your vehicle and think that a tire is under-inflated, fill it to the recommended cold inflation pressure indicated on your vehicle's tire information placard or certification label. While your tire may still be slightly under-inflated due to the extra pounds of pressure in the warm tire, it is safer to drive with air pressure that is slightly lower than the vehicle manufacturer's recommended cold inflation pressure than to drive with a significantly under-inflated tire. Since this is a temporary fix, don't forget to recheck and adjust the tire's pressure when you can obtain a cold reading.

TIRE SIZE

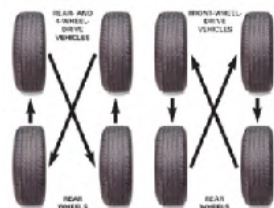
To maintain tire safety, purchase new tires that are the same size as the vehicle's original tires or another size recommended by the manufacturer. Look at the tire information placard, the owner's manual, or the sidewall of the tire you are replacing to find this information. If you have any doubt about the correct size to choose, consult with the tire dealer.

TIRE TREAD

The tire tread provides the gripping action and traction that prevent your vehicle from slipping or sliding, especially when the road is wet or icy. In general, tires are not safe and should be replaced when the tread is worn down to 1/16 of an inch. Tires have built-in treadwear indicators that let you know when it is time to replace your tires. These indicators are raised sections placed intermittently in the bottom of the tread grooves. When they appear "even" with the outside of the tread, it is time to replace your tires. Another method for checking tread depth is to place a penny in the tread with Lincoln's head up and down and facing you. If you can see the top of Lincoln's head, you are ready for new tires.

TIRE BALANCE AND WHEEL ALIGNMENT

To avoid vibration or shaking of the vehicle when a tire rotates, the tire must be properly balanced. This balance is achieved by positioning weights on the wheel to counterbalance heavy spots on the wheel-and-tire assembly. A wheel alignment adjusts the angles of the wheels so that they are positioned correctly relative to the vehicle's frame. This adjustment maximizes the life of your tires and prevents your car from veering to the right or left when driving on a straight, level road. These adjustments require special equipment and should be performed by a qualified technician.



A Tire Rotation Example

For maximum mileage, rotate your tires every 5,000 miles. Follow correct rotation patterns.

TIRE ROTATION

Rotating tires from front to back and from side to side can reduce irregular wear for vehicles that have tires that are all the same size. Look in your owner's manual for information on how frequently the tires on your vehicle should be rotated and the best pattern for rotation.

TIRE REPAIR

The proper repair of a punctured tire requires a plug for the hole and a patch for the area inside the tire that surrounds the puncture hole. Punctures through the tread can be repaired if they are not too large, but punctures to the sidewall should not be repaired. Tires must be removed from the rim to be properly inspected before being plugged and patched.

TIRE FUNDAMENTALS

Federal law requires tire manufacturers to place standardized information on the sidewall of all tires. This information identifies and describes the fundamental characteristics of the tire and also provides a tire identification number for safety standard certification and in case of a recall.

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UNIFORM TIRE QUALITY GRADING SYSTEM (UTQGS)

To help consumers compare a passenger car tire's treadwear rate, traction performance, and temperature resistance, the federal government requires tire manufacturers to grade tires in these three areas. This grading system, known as the Uniform Tire Quality Grading System, provides guidelines for making relative comparisons when purchasing new tires. You also can use this information to inquire about the quality of tires placed on new vehicles.

Although this rating system is very helpful when buying new tires, it is not a safety rating or guarantee of how well a tire will perform or how long it will last. Other factors such as personal driving style, type of car, quality of the roads, and tire maintenance habits have a significant influence on your tire's performance and longevity.

Treadwear grades are an indication of a tire's relative wear rate. The higher the treadwear number is, the longer it should last for the tread to wear down. For example, a tire grade of 400 should wear twice as long as a tire grade of 200.

Traction grades are an indication of a tire's ability to stop on wet pavement. A higher graded tire should allow you to stop your car on wet roads in a shorter distance than a tire with a lower grade. Traction is graded from highest to lowest as "A," "B," and "C".

Temperature grades are an indication of a tire's resistance to heat. Sustained high temperature (for example, driving long distances in hot weather), can cause a tire to deteriorate, leading to blowouts and tread separation. From highest to lowest, a tire's resistance to heat is graded as "A," "B," or "C".

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INFORMATION ON PASSENGER VEHICLE TIRES

Please refer to the diagram below.



P

The "P" indicates the tire is for passenger vehicles.

Next Number

The three-digit number gives the width in millimeters of the tire from a sidewall edge to sidewall edge. In general, the larger the number, the wider the tire.

Next Number

The load index number, known as the aspect ratio, gives the tire's ratio of height to width. Numbers of 70 or lower indicate a short sidewall for improved steering response and better overall handling on dry pavement.

R

The "R" stands for radial. Radial ply construction of tires has been the industry standard for the past 20 years.

Next Number

This two-digit number is the wheel or rim diameter in inches. If you change your wheel size, you will have to purchase new tires to match the new wheel diameter.

Next Number

This two- or three-digit number is the tire's load index. It is a measurement of how much weight each tire can support. You may find this information in your owner's manual. If not, contact a local tire dealer. Note: you may not find this information on all tires because it is not required by law.

M+S

The "M+S" or "M/S" indicates that the tire has some mud and snow capability. Most radial tires have these markings; hence, they have some mud and snow capability.

Speed Rating

The speed rating denotes the speed at which a tire is designed to be driven for extended periods of time. The ratings range from 59 miles per hour (mph) to 188 mph. These ratings are listed below. Note: you may not find this information on all tires because it is not required by law.

Letter Rating	Speed Rating
A	188 MPH
B	184 MPH
C	180 MPH
D	176 MPH
E	172 MPH
F	168 MPH
G	164 MPH
H	160 MPH
V	155 MPH
S	150 MPH
T	145 MPH

For tires with a maximum speed capability over 149 mph, tire manufacturers sometimes use the letters ZR. For those with a maximum speed capability over 186 mph, tire manufacturers always use the letters ZR.

U.S. DOT Tire Identification Number

This begins with the letters "DOT" and indicates that the tire meets all federal standards. The next two numbers or letters are the plant code where it was manufactured, and the last four numbers represent the week and year the tire was built. For example, the numbers 3197 means the 31st week of 1997. The other numbers are marketing codes used at the manufacturer's discretion. This information is used to contact consumers if a tire defect requires a recall.

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Tire Ply Composition and Materials Used
The number of plies indicates the number of layers of rubber-coated fabric in the tire. In general, the greater the number of plies, the more weight a tire can support. Tire manufacturers also must indicate the materials in the tire, which include steel, nylon, polyester, and others.

This number indicates the maximum load in kilograms and pounds that can be carried by the tire.

Maximum Permissible Inflation Pressure
This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

Trademark: Marubeni

This number indicates the tire's wear rate. The higher the treadwear number is, the longer it should take for the tread to wear down. For example, a tire graded 400 should last twice as long as a tire graded 200.

This letter indic

This letter indicates a tire's ability to stop on wet pavement. A higher graded tire should allow you to stop your car on wet roads in a shorter distance than a tire with a lower grade. Traction is graded from highest, to lowest as "AA," "A," "B," and "C."

This letter indic

The temperature grade is a fire that is inflated properly and not over loaded. Excessive speed, under inflation or excessive loading, either separately or in combination, can cause heat build-up and possible tire failure. From highest to lowest, a tire's resistance to heat is graded as "A", "B" or "C".

[illegible]

Tires for light trucks have other markings besides those found on the sidewalls of passenger tires.

The "L" indicates the tire is for light trucks.

Max. Load Dual (kg) at 80k (psi) Cold
This information indicates the maximum load and tire pressure when the tire is used as a dual, that is, when four tires are put on each rear axle (a total of six or more tires on the vehicle).

This information indicates the maximum load and tire pressure when the tire is used as a single.

This information identifies the tire's load-carrying capabilities and its inflation limits.

In some heavy snow areas, local governments may require true snow tires, those with very deeply cut tread. These tires should only be used in pairs or placed on all four wheels. Make sure you purchase snow tires that are the same size and construction type as the other tires on your vehicle.

CHASSIS SPECIFICATIONS

[illegible]

LEAD-IN: BLUMEN TO BLUMEN	10' 7" (254 cm)
HEAD: SLIP SLIDE TUBULAR BLUMEN HEAD	1' 7" (41 cm)
OVERALL COG IT	9' 7" (292 cm)
INTERIOR DOWNING / COG IT	6' 2" (188 cm)
HEAD: WATER TANK CAPACITY	30.45 Cu./Yd.
SHR: WATER TANK CAPACITY	10.09 Cu./Yd.
BLACK WATER TANK CAPACITY	10.05 Cu./Yd.
UP: WATER CAPACITY (AT MAX FULL)	6.18 Cu./Yd.
MODEL TYPE	48888
HEAD: TANK CAPACITY	34.51 Cu./Yd.
TOTAL COG CAPACITY	0.002329 / 2.248 kg
LEAD-IN: BLUMEN	10' 7" (254 cm)
HEAD: SLIP SLIDE	1' 7" (41 cm)
OVERALL COG IT	9' 7" (292 cm)
INTERIOR DOWNING / COG IT	6' 2" (188 cm)
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