PARCAR

2017

Model P5-P/L

AC Drive System

Eagle

Owner and Operator Manual

PN 712248-06
6/2016

Preface

Welcome, and congratulations on your choice of vehicle from ParCar! Your vehicle has been manufactured in full compliance with all applicable American National Standards Institute (ANSI) standards. Your safe use and operation of your vehicle is important to us. Any alteration of your ParCar vehicle that results in the vehicle being in noncompliance with applicable ANSI standards is strictly prohibited. ParCar is not responsible or liable for any damage that results from any such alteration, and all warranties for any such altered vehicles are null and void.

Personal Transport Vehicles (PTV) are not designed for over-the-road use. They do not conform to Federal Motor Vehicle Safety Standards or EPA regulations, and are not equipped for operation on public streets, roads, or highways.

Low Speed Vehicles (LSV) commonly referred to as NEV or Neighborhood Electric Vehicles meet the requirements of the National Highway Traffic & Safety Administration (NHTSA) as stated in the Code of Federal Regulations, Title 49, Part 571, Standard 500, Low Speed Vehicles.

To the best knowledge of ParCar the material contained herein is accurate as of the date this publication was approved for printing. ParCar is not liable for errors in this manual or for incidental or consequential damages that result from the use of the material in this manual. ParCar reserves the right to change specifications, equipment or designs at any time without notice and without incurring obligation.

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CHANGE HISTORY		
DATE	**DESCRIPTION**	**BY**
5/30/2016	Issued	

This manual provides important safety information, operating instructions, model specifications and maintenance instructions for electric vehicles. It should be read completely before attempting to drive or service the vehicle. Failure to follow the instructions in this manual could result in property damage, severe personal injury, or death.

The information in this manual is limited to care and maintenance information only. Information covering repairs is provided in detailed service manuals available from ParCar dealers. Such major repairs require the attention of a skilled technician and the use of special tools and equipment. Your ParCar dealer has the facilities, experience and genuine ParCar vehicle parts and accessories to properly service ParCar vehicles.

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SERVICING YOUR VEHICLE

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WARRANTY

SAFETY MESSAGES

Safety messages and other information in this manual are preceded by the words **DANGER, WARNING, CAUTION or *NOTICE***. They are printed in bold face, and are very important. We recommend you take special notice of this information.

⚠ DANGER

Danger indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

Warning indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

Caution indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

***NOTICE*: Notices are messages not related to personal injury. They will provide key information to prevent property damage and to assure procedures are more easily understood or implemented.**

VEHICLE IDENTIFICATION NUMBER – PERSONAL TRANSPORT VEHICLES (P5-P)

Each PTV vehicle contains a unique Vehicle Identification Number (VIN) label. The VIN describes facts and features of the vehicle and contains fourteen (14) digits. Figure 1 is an example of a VIN label. VIN labels and can be found in several locations on the vehicle. One location will be under the steering wheel cover as shown in Figure 2. Access to this location is by removing the three screws holding the cover in place. Another location is in the glove box area as shown in Figure 3.

Columbia ParCar Corp.
P5-TE
PL26AXG1000020
Made in the U.S.A.

FIGURE 1

FIGURE 2

FIGURE 3

VIN MATRIX Personal Transport Vehicle (PVT)

Digit 1: Line	P = ParCar
Digit 2: Model	L = P5 Eagle
Digit 3: Body Type	2 = 2 Person / 4 = 4 Person
Digit 4: Power System	6 = DC Electric / 8 = AC Electric
Digit 5: Restraint	A = Two Point Seat Belt Assembly B = Three Point Seat Belt Assembly
Digit 6: Check Digit	Calculated per 49 CFR 565.4
Digit 7: Model Year	H = 2017 / J = 2018 / etc...
Digit 8: Plant Location	1 = Wisconsin
Digit 9-14: Sequential Numbers	000001 - 999999

VEHICLE IDENTIFICATION NUMBER LOW SPEED VEHICLES

The VIN is printed on a white label, affixed to the top of the dash and affixed to the steering wheel under the steering wheel cover (Figure 2). The VIN is also noted on the LSV VIN Label as seen below, affixed to the bottom of the front hood area.

MFD BY: COLUMBIA PARCAR CORP
REEDSBURG, WI 53959, USA
DATE MFD: / MM/YY
GVWR: KG (LBS)
GAWR: FRONT - KG (LBS)
GAWR: REAR - KG (LBS)
TIRE SIZE: / (SIZE SPEC)
COLD INF. PRESSURE (FRONT & REAR)
KPA (PSI)
RIMS: X
MAXIMUM LOAD: KG (LBS)
OCCUPANTS: (FRONT REAR)
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.
VIN:
TYPE: LOW SPEED VEHICLE

VIN MATRIX Low Speed Vehicle (LSV)

Digit 1 thru 3: Manufacturer Identification	5FC = CPC
Digit 4: Line	P = ParCar
Digit 5: Model	L = P5 Eagle
Digit 6: Body Type	2 = 2 Person / 4 = 4 Person
Digit 7: Power System	6 = DC Electric / 8 = AC Electric
Digit 8: Restraint	A = Two Point Seat Belt Assembly B = Three Point Seat Belt Assembly
Digit 9: Check Digit	Calculated per 49 CFR 565.4
Digit 10: Model Year	H = 2017 / J = 2018 / etc...
Digit 11: Plant Location	1 = Wisconsin
Digit 12-17: Sequential Numbers	000001 - 999999

VEHICLE SPECIFICATIONS

ITEM	SPECIFICATION
Motor	48 volt, 15.3 hp @ 1750 rpm
Drive	Direct coupled to oil bath, helical geared, rear axle
Rear Axle	10.35.1 helical gear reduction with integral differential
Charger	Built in, micro-processor control, fully sealed, anti-drive away interlock, 110V AC, 50/60 Hz
Directional Control	Center located rotary switch with FL (Forward Low), FH (Forward High), R (reverse) and N (neutral)

ITEM	SPECIFICATION
Steering	Automotive rack and pinion.
Tire PSI	32 psi 215/50-13 30 psi 205/50-10
Battery Deep Cycle	48 Volt: 8 - 6 volt, heavy duty, 232 Ah
Speed Control	Programmable, solid state, reduced speed reverse with diagnostic and calibrator interface
Brakes	Spring applied, auto-adjusting mechanical drum on rear wheels, foot operated parking brake

***NOTICE*: Always provide the complete VIN when contacting your dealer for technical assistance or maintenance and repair parts.**

For your own personal reference, fill in the VIN for your vehicle in the space provided below:

GETTING STARTED

For personal safety before operating the vehicle, it is the operator's responsibility to read, understand and follow the basic rules of operation and maintenance instructions in this manual. If you are responsible for the use of the vehicle, it is your responsibility to inform the person or persons using the vehicle about the following basic rules of operation for their personal safety.

It is ParCar's specific recommendation that the following warnings must be observed at all times. Not all are repeated throughout this manual, but the recommendations included must be observed whenever these subjects (vehicle operation hazards, battery hazards, etc.) are encountered.

Be a safe operator. Electric vehicles are only as safe as the person who is at the controls. If accidents are to be prevented, and they most certainly can be prevented, operators must accept their full measure of responsibility. While the designer, the manufacturer and the safety engineer can help minimize the possibility of an accident, their combined efforts can be erased by a single careless act.

SAFETY GUIDELINES

Observe the following guidelines for safe operation.

- Define where vehicles may be driven.
- Define who should be allowed to drive the vehicle.
- Instruct first-time drivers.
- Maintain vehicles in a safe driving condition.
- Enforce safe-driving rules.

VEHICLE SAFETY STATEMENTS

⚠ DANGER

This vehicle will not provide protection from lightning, flying objects, or other storm related hazards. If driving the vehicle in a storm, leave the vehicle and take shelter as per safety guidelines for your location.

Any modifications or changes to the vehicle that affect the stability, steering or that results in increased speed beyond factory specifications could result in vehicle damage, severe personal injury or death.

⚠ CAUTION

When replacement parts are required, use only genuine ParCar vehicle parts.

No modifications or additions, which affect the mechanical or electrical integrity and the safe operation of the unit, shall be made without the written approval of the manufacturer. If in doubt about any modification, contact your local ParCar dealer or ParCar customer service.

⚠WARNING

For personal safety and to maintain stability and control, operate this vehicle under these conditions only. Failure to comply with these warnings may result in bodily injury and property damage. These basic rules of operation, combined with courtesy and common sense, will help make driving your ParCar vehicle a safe and pleasant experience.

All vehicles should only be operated from the driver's side by authorized persons.

Never exceed the capacity ratings of the vehicle. Exceeding these limits may endanger occupants.

Personal injury may result if body parts (arms, head, and legs) are not kept inside vehicle while moving. Do not start moving until all occupants are seated. Remain seated and hold on while vehicle is in motion.

Before leaving your seat, completely stop vehicle and engage parking brake. If vehicle is to be left unattended, turn keyswitch to "OFF" and remove key.

Do not use accelerator to hold vehicle on an incline, instead use service brake pedal.

Make sure directional switch is in position for the desired direction of travel before depressing the accelerator. Do not change the directional switch while vehicle is moving.

Drive slowly in turns and up or down grades. Do not make turns on steep hills or inclines.

Do not operate while under the influence of alcohol or drugs.

Personal Transportation Vehicles are not Federal or State DOT approved and are not equipped to be operated on public roads or highways.

To avoid the risk of injury or vehicle damage, operate at maximum speed only on smooth flat surfaces.

Allow additional stopping distance when traveling at higher speeds.

Follow all procedures exactly and observe all safety messages stated in this manual.

Working on vehicles without following proper procedures and using proper equipment may result in vehicle damage or personal injury.

Do not attempt to service hot motor or components. Failure to observe this warning could result in severe burns.

Always wear safety glasses or approved eye protection while servicing vehicle.

Failure to maintain vehicle properly could result in decreased vehicle performance, reliability or cause severe personal injury.

IMPORTANT FIRST STEP

Upon initial delivery, it is very important that the battery pack is properly charged. This is required if the vehicle is to be stored for later use or is to be used immediately.

- Check that the batteries are not damaged or leaking and that connections are tight.

***NOTICE*: The following information does NOT apply to sealed batteries.**

- Remove the battery vent caps and inspect each cell for proper electrolyte level. The battery manifold assemblies on vehicles with a single point watering system will require a ¼ counterclockwise turn to be removed for this inspection.
- If the electrolyte level is below the plates add only enough water to cover the plates.

***NOTICE*: Do not overfill a cell. Electrolyte expands and can overflow during charging.**

- With the electrolyte level correct, use the on board charger to charge the batteries. Charging is complete when the remote LED is steady green.
- Vehicles without a single point watering system, after charging, refill cells to below the bottom of each cell vent.
- Vehicles with a single point watering system will require completion of 4 to 5 charge cycles before watering.

***NOTICE*: If the vehicle is not going to be used the charger can remain connected to an AC source. It has the capability to test and recharge the battery pack during storage.**

INSPECTING THE VEHICLE

After battery charging, perform an inspection of the vehicle to ensure that it is in safe proper working order.

Examine the contents of all packages and accessories that may have come in separate packages with this vehicle. Make sure everything listed on the packing slip is there. Items should not be broken or damaged.

Examine any visible wiring for obvious signs of damage. Check that all connections are secure.

Inspect the tires for obvious wear or damage. Check for proper tire inflation (32 psi recommended). Make sure that all wheel lugs are secure.

Check the body, seats, trim and other external parts for obvious damage. Look for body damage, jagged edges etc. that may cause personal injury.

Operate each of the following controls before turning on the power keyswitch.

- Accelerator Pedal for smooth operation.
- Braking Pedal, assure presence of a firm pedal with minimal travel.
- Check steering for responsiveness and minimal play.
- Key can only be removed when keyswitch is in the “OFF” position.

***NOTICE*: Each control should operate smoothly and easily without sticking or requiring excessive effort.**

Check that the directional selector operates properly, the horn works and the warning buzzer sounds in reverse.

If vehicle has just been delivered, report any physical damage or missing items to the shipping company or your local ParCar Dealer.

Report any battery or service issue problems to the individual(s) responsible for correction and/or repair or contact your local Parcar Dealer for service.

⚠ DANGER

If any problems are found, do not operate vehicle until repairs are made. Failure to make necessary repairs could result in fire, severe personal injury, property damage or death. Consult your local ParCar Dealer for professional service.

VEHICLE CONTROLS

KEYSWITCH

This is a five position automotive type switch and is located on the right side of the steering column. The first key position is OFF and is marked S. The second is an accessory position marked A which is not used. The third position is not marked and is not a key stop. It is not used. The fourth position marked M is the ON and powers up the vehicle. The last position marked D is not used. If the key is rotated to this position the vehicle power will be reset.

Turning the keyswitch to OFF is highly recommended whenever vehicle is not in use. Always remove the key out from the keyswitch when leaving the vehicle**.**

DIRECTION SELECTOR

Selector is located between the seats. In the middle position the vehicle's direction signal is turned OFF or in neutral. Turning the selector to the right from the middle position moves the vehicle in forward direction (high & low speeds). Turning the direction selector to the left moves the vehicle in the reverse direction. A warning buzzer sounds when in reverse.

TURN SIGNAL/LIGHTS/HORN SWITCH

The horn is activated by pushing in the button at the lever (A.). Moving lever up or down will activate the turn signals. A green light on the dash will flash indicating the turning direction. The headlights and taillights are activated by a three position selector (B). OFF is the bottom position, middle activates the parking and tail lights, and the upper position activates the headlights. High and low beams are selected by pulling back on the lever.

WINDSHIELD WIPER/WASHER

Wiper switch is located on the right side of the steering console. Wipers have four up positions:

3 High Speed
2 Slow Speed
1 Off
0 Off

Pulling lever towards you activates the washer fluid. Pushing the switch down activated a “quick” wipe. The fluid reservoir is located under the front hood.

NOTICE: **To avoid scratching the windshield always apply fluid before wiping.**

PARKING BRAKE

Shown is the parking brake pedal. To engage pedal, press on service brake pedal until completely lowered, then roll foot to press down simultaneously on the left raised portion of the upper pedal section.

Always apply the parking brake when leaving the vehicle. It should be firmly pressed and locked to prevent the vehicle from rolling. It remains applied until released automatically by pressing the accelerator pedal.

STEERING WHEEL

The steering wheel controls the path of the vehicle exactly the same as a conventional automobile wheel.

ACCELERATOR PEDAL

The accelerator pedal controls the speed of the vehicle in the same manner as a conventional automobile, and is located to the right of the brake pedal. The pedal should be fully released when changing directions.

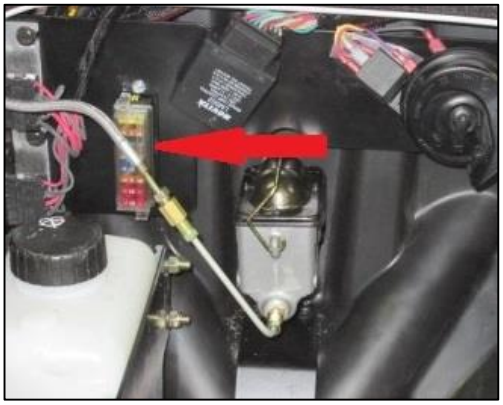
HAZARD WARNING SWITCH

The hazard warning toggle switch is located on the top of the steering column.

FUSE BLOCK - 12V ELECTRICAL CIRCUIT

A fuse block protecting the 12V electrical circuits of the vehicle is located under the hood. This system runs the accessories (wiper/washer, dome, etc.). The fuse block has a snap off cover for access to the fuses.

12 Volt Fuse Descriptions			
#	Amps	Color	Circuit
H	N/A	N/A	Trailer Option
G	5A	Orange	Dome Lamp
F	1A	Gray	Parking Brake Light
E	5A	Orange	Speed Sensor
D	15A	Blue	Lighting
C	5A	Orange	Display Panel
B	10A	Red	Wiper/Washer
A	10A	Red	12V Acc. Outlet

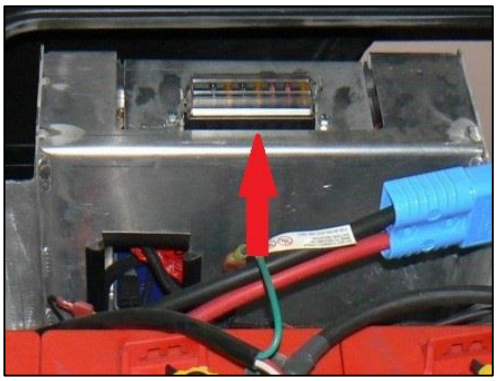


***NOTICE*: If fuses continue to blow and require replacement, have your ParCar Dealer check the electrical circuit.**

FUSE BLOCK - 48V ELECTRICAL CIRCUIT

A fuse block protecting the 48V electrical circuits (horn, etc.) of the vehicle is located attached to the top of the controller box assembly. The fuse block has a snap off cover for access to the fuses.

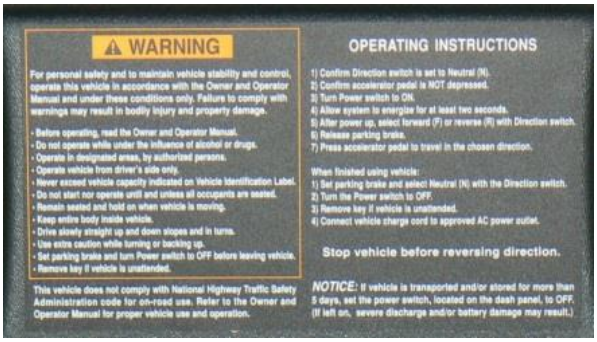
48 Volt Fuse Descriptions			
#	Amps	Color	Circuit
*	1A	Gray	Key Switch
A	5A	Orange	Strobe
B	5A	Orange	Horn
C	5A	Orange	L.A.D.
D	10A	Red	Controller
E	10A	Red	DC Converter #1
F	10A	Red	DC Converter #2



***NOTICE*: If fuses continue to blow and require replacement, have your ParCar Dealer check the electrical circuit.**

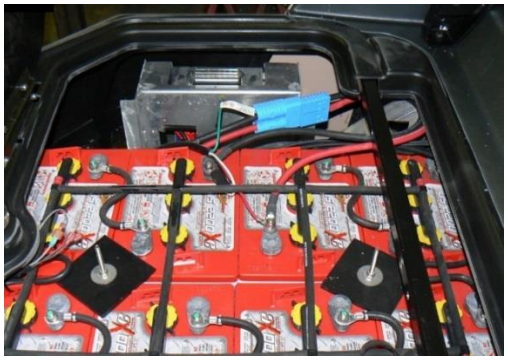
WARNINGS & OPERATING INSTRUCTION

Read this information carefully before operating the vehicle. Promptly replace if removed or damaged. Contact your ParCar dealer for replacements if needed.



BATTERY ACCESS

Batteries are located beneath the front seats. Before performing vehicle service, power down the vehicle with key, and remove power from electrical system using the blue quick disconnect between the battery pack and the controller assembly.



MOTOR ACCESS

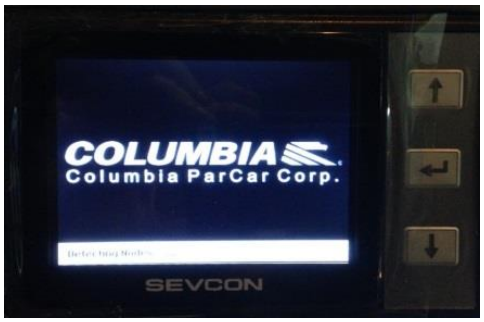
In the rear bag well area, there is a motor access panel held in place with 6 screws. Additional component access is under the front hood and beneath the vehicle.

DASH PANEL

Located on the dash, this panel contains the left and rights green turn signal indicators and the Clearview AC display. This display will show the battery state of charge as a percentage of full charge, the system status, the operating speed, odometer, and direction selected.

INITIAL BOOT SEQUENCE

At power on, the display will perform a self-test and load the controller data. You will see the Columbia ParCar Corp logo indicating the system is preparing for operation.

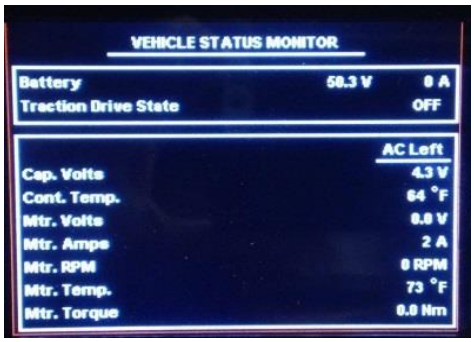


DISPLAY AS STATUS MONITOR

In addition to standard operations, the display can also be utilized as a vehicle monitoring system. By pressing and holding the right center “Enter” button, a menu will appear with access to vehicle data, status and fault codes, should any be present. To toggle through the menu system, use the “Up” or “Down” arrows. To return to the previous screen, press and hold the right center “Enter” button again

The Main 2 Menu will show the key “on” hours, the hours the motor has been used, the current, speed in RPM’s if operating, the battery current draw during operation and the percentage the throttle pedal is depressed. This information is helpful in the event of any operational concerns

The Vehicle Status Monitor selection displays the current state of vehicle data collected at the controller



MULTI-FUNCTION CLEARVIEW DISPLAY PANEL

BATTERY LEVEL INDICATOR:

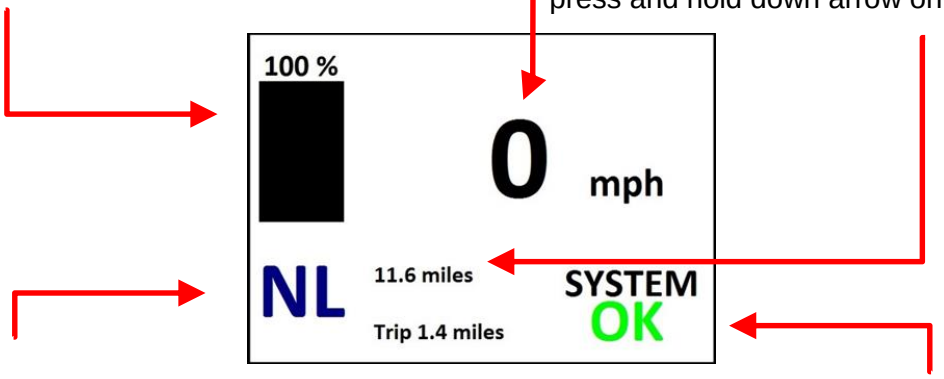
When fully charged, the battery level is shown as a bar graph in the upper left section of the display, with the level indicated as a percentage of available charge. ***NOTE:*** **If the display indicates 20% or less, you must immediately charge batteries or vehicle operation will cease and permanent battery damage could occur.**

SPEEDOMETER:

The center area of the display will indicate speed in Miles Per Hour. Speed is calculated from signals sent from the motor to the controller

ODOMETER:

The lower center area shows total miles operated and per trip. To reset trip odometer press and hold down arrow on display panel.



DIRECTION OF TRAVEL:

The selected position of the direction knob is indicated in the lower left section of the display.

RL = Reverse Low allows vehicle to operate in reverse direction at slower speed than forward.

NL = Neutral

FL = Forward Low allows vehicle to operate in forward direction, with maximum speed of 25mph, yet with reduced power to operate in an energy efficient mode. This mode is suitable for everyday operation on fairly flat terrain.

FH = Forward High allows vehicle to operate in forward direction, with maximum speed of 25mph, and with full power available. This mode is suitable for operation where some terrain grades are present requiring additional power to maintain speed and throttle responsiveness.

SYSTEM STATUS MONITOR:

The vehicle controller monitors the status of the vehicle and indicates if there is a fault which may affect vehicle performance.

OK = System has passed initial checks and is ready for operation.

! = A black exclamation point indicates a system check has detected a minor fault. (ie…overheated or low battery). Vehicle will operate in performance cutback mode.

! = A yellow exclamation point indicates a system check has an intermediate fault. This can often be cleared by resetting the condition. (ie…. Throttle pressed prior to selecting direction or parking brake engaged while pressing throttle to move vehicle.)

! = A red exclamation point indicates a system check has detected a major fault. Vehicle will not operate until key is recycled and fault is no longer detected.

MULTI-FUNCTION SMARTVIEW DISPLAY PANEL

DASH PANEL

Located on the dash, this panel contains the left and rights green turn signal indicators and the Smartview AC display. This display will show the battery state of charge as a percentage of full charge, the system status fault codes, and the hours on the vehicle.

For assistance with possible fault codes, see troubleshooting section of this manual.

IMPORTANT BATTERY INFORMATION

The type of battery used in a ParCar vehicle has a service requirement which is quite different from that of an automotive battery.

The electric vehicle battery supplies all of the power to drive the vehicle. During operation the power stored in the batteries is expended. While the amperage drain rate can vary greatly depending on the type of service, the duration of use and the number of "starts" and "stops" made during a day, the batteries nevertheless progress through each duty cycle from "fully charged" to an almost depleted state.

This type of service is known as "deep cycle" service and electric vehicle batteries are specifically designed to handle this type of service. Proper performance of your ParCar vehicle can only be obtained from specified deep cycle, electric vehicle batteries.

PLEASE REVIEW IMPORTANT DANGER, AND WARNING STATEMENTS WHEN WORKING AROUND BATTERIES AND CHARGING SYSTEMS!

DRIVING THE VEHICLE

- Complete the following PRE-OPERATION CHECKLIST.
- Fasten seat belts (if vehicle is so equipped).
- Insert key in power keyswitch, press brake pedal firmly, and turn key to "ON" position.
- Switch the direction selector to the direction of desired travel.
- Release the parking brake and brake pedal.
- Slowly press accelerator pedal to obtain desired vehicle speed.
- To slow or stop vehicle, remove foot from accelerator and press brake pedal.

PRE-OPERATION CHECKLIST

⚠CAUTION

Should any item malfunction or need adjustment, do not operate vehicle until the problem has been corrected.

ITEM	PROCEDURE
Batteries	Fully charged or adequately charged to provide power for duration of operations.
	The AC cord is disconnected from the vehicle.
	Electrolyte level in each cell covers the top of cell plates. See Page 16, Single Point Battery Watering System. (Does not apply to sealed batteries)
	Batteries are secure and free of corrosion.
	All terminals and connections are tight. Torque connections to 100 in. lbs.
Tire Pressure	32 psi for 215/50-13 tires 30 psi for 205/50-10 tires
Lights, Horn and Reverse Buzzer	Head, tail and brake lights illuminate.
	Press horn button to sound horn.
	Reverse buzzer sounds.
Brakes	Brake pedal has firm pedal pressure with minimal travel.
	Parking brake has proper engagement and release.
Steering	Responsiveness and the absence of excessive free play.
Cargo	Load is secure, balanced and not top heavy.
Obstacles	Path of intended travel is free from obstructions.
Seat Belts	If equipped, driver and passenger are secured by seatbelts before moving vehicle.
Labels	All warning and operation labels in place.
Accelerator	Check for smooth operation.

BATTERY INSPECTION & MAINTENANCE

⚠ DANGER

Battery acid is poisonous and can cause severe burns. Avoid contact with skin, eyes, or clothing.

ANTIDOTES:

EXTERNAL: Flush with water. Call a physician immediately.

INTERNAL: Drink large quantities of milk or water. Follow with milk of magnesia or vegetable oil. Call a physician immediately.

EYES: Flush with water for fifteen minutes. Call physician immediately.

⚠ DANGER

Always remove key and disconnect battery pack before servicing or repairing the vehicle. See BATTERY DISCONNECT METHOD.

Always wear full-face shield when working on or near batteries.

All batteries used in electric vehicles can explode! Batteries produce explosive hydrogen gas at all times, especially, during charging or discharging. Ventilate area when charging batteries.

Do not attempt to charge a battery if it is frozen, or if the case is bulged excessively. Frozen batteries can explode! Properly dispose of the battery.

Do not smoke around batteries. Keep sparks and flames away from batteries and the charging area. Use care to prevent an accidental arc which could cause an explosion. Use only approved insulated tools, remove jewelry such as rings, watches, chains etc. and place an insulating material (wood, plastic, rubber etc.) over all battery connections.

Never add acid to a battery.

⚠ WARNING

To reduce the risk of electrical shock or injury:

Do not use an ungrounded two to three-prong adapter to connect the charger to a two-prong outlet or extension cord.

The battery charger must be properly grounded. Use a three prong No. 12 AWG heavy duty power cord no more than 50 feet long.

Locate all cords so that they will not be stepped on, tripped on, or otherwise damaged. Immediately replace worn, cut, or damaged power cords or wires.

Do not connect the power cord near fuels, grain dust, solvents, thinners, or other flammables. The spark can ignite flammable materials and vapors

BATTERY INSPECTION & MAINTENANCE (Continued)

NOTICE: **Automotive batteries should never be used for "deep cycle" application, as their useful life will be very short.**

Damaged or corroded battery terminals should be replaced or cleaned as necessary. Failure to do so may cause overheating during operation. Torque connections to 100 in. lbs.

Do not attempt to recharge batteries with a charger not designed for your vehicle.

Only trained technicians should service the charger. Contact your ParCar Dealer for assistance.

Install surge arrestors on incoming AC power lines. Surge arrestors will help protect electrical/electronic components in the charger and vehicle from all but direct or "close proximity" lightning strikes.

1. Be sure battery hold downs are properly tightened. A loose hold down may allow the battery to become damaged from vibration or jarring. A hold down that is too tight may buckle or crack the battery case.
2. Weekly inspect battery posts, clamps and cables for breakage, loose connections and corrosion. Replace any that are damaged. Batteries and connections must be clean and dry. Torque connections to 100 in. lbs.
3. Weekly an equalization charge is to be applied to the battery pack. This process balances the electrical charge in the battery pack and will extend battery life. The following procedure is used to complete this.

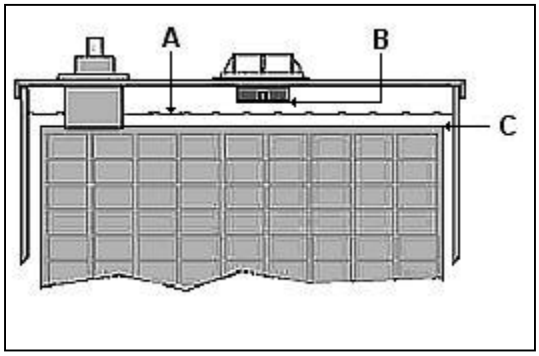
- Charge the battery pack allowing the charger to go to green 100% charge.
- Once the green LED lights unplug the power cord.
- Wait approximately 30 seconds. Reconnect the power cord and allow the charger to complete a second charge cycle.
- If the vehicle is not to be used, leave power cord connected. The on-board charger can test and recharge as needed.

BATTERY CLEANING

Acid-soaked debris on the battery terminal connections will cause current leakage, reduces battery efficiency, and battery life.

Hose wash battery terminal connections periodically with clean low-pressure water to keep them free of acid spillage, dirt, and other debris. Do not hose wash electronic controllers, switches, solenoids and other electrical control devices. Cover as necessary to prevent splashing. Clean battery terminal connections with baking soda (sodium bicarbonate) and water solution. Mix 5 teaspoons baking soda per quart of water. Use a stiff bristle brush, rinse with clean water and dry with a clean cloth. Torque connections to 100 in. lbs

***NOTICE*: The following information does NOT apply to sealed batteries.**



1. Check the electrolyte level on new batteries before they are put into service, and, at a minimum, once a week thereafter. Water use increases as batteries age. If the vehicle is equipped with a Single Point Battery Watering System see the information on this in this section.
2. Never allow the electrolyte level (A) to fall below the top of the plates (C). If the plates are exposed, add only enough to cover the plates before charging.
3. After batteries are fully charged, fill cells to just below the bottom of the cell vents (B), approximately 1/8" to 1/4". Electrolyte level should not touch the bottom of the cell vents.
4. Do not overfill batteries. Electrolyte expands and can overflow during charging. Water added to replace the spillage dilutes the electrolyte and reduces its specific gravity.
5. Use only distilled water. Vehicle batteries may use up to 16 quarts of water during their useful life and non-distilled water may contain harmful minerals which will have a cumulative adverse effect on battery performance and life.
6. Check to see that battery cap vent holes are clear. Plugged vent holes will not permit gas to escape from the cell and could result in battery damage. Check that all vent caps are tightly in place. Do not allow water or cleaning solution to enter cap vent holes.

***NOTICE:* Follow local ordinances and codes for proper disposal of battery cleaning waste.**

CONDITIONS WHICH AFFECT CHARGING

Always schedule enough charging time so the charger attains the 100% level. Charging time is affected by age and battery condition, state of discharge, electrolyte temperature, AC line voltage, and other variables. Correct charging methods extend battery life and vehicle range between charges. If vehicle is used only occasionally, a refresher charge should be given prior to using.

New batteries need up to four hours more charging than “mature” batteries. Before the first use, completely charge new batteries. Charging time will vary based on conditions noted above but will probably be 12 hours.

Limit new batteries use between charges for the first 25 – 50 cycles. New batteries have less capacity than seasoned batteries. New batteries should not be discharged more the 20 – 30% before recharging. This will prevent premature battery failure.

Battery efficiency is affected by temperature. If the temperature of the outside air and/or batteries is below 60º F, battery capacity is reduced. Batteries will require more frequent and longer charge periods in early spring, fall and winter.

As batteries age, they finish charge at progressively higher charge rates and tend to use more distilled water. At this point in battery age, charger will automatically begin reducing charge time.

Batteries found defective must be replaced. All batteries in a vehicle should be matched according to age, capacity and brand.

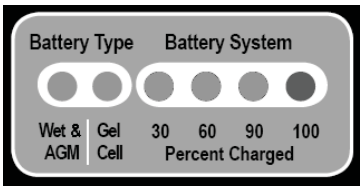
BATTERY CHARGING

The charger receptacle is located on the left side of the vehicle near the driver’s position. The AC cord is plugged in here for battery charging. The charger is inter-locked with the traction control system which powers down the vehicle during charging. Near the receptacle is a remote LED which will indicate the battery charge status.

Always apply the parking brake when charging.

All current production ParCar electric vehicles are built with new solid state on-board, fully automatic high-frequency, programmable battery charger as standard equipment.

When your battery charging system is activated, the battery status indicator provides charging information utilizing five red LED indicators and one green LED indicator.



Battery Type Indicators

Two amber LED indicators are provided in order to display what type of battery the charger has been programmed to charge. **NOTE:** For information on reconfiguring the battery type, please contact ParCar technical support.

Battery System Percent Charged Indicators

Four LED indicators are provided in order to display the progress of the charge cycle in percentage of charge.

Indications are as follows:
1ST AMBER LED.....Illuminated configured for Wet Cell and **AGM*** batteries
2ND AMBER LED.....Illuminated configured for Gel Cell batteries
1ST RED LED.....Charging - Initial Charging Up To 30%
2ND & 3RD RED LEDS .....Charging - 60% Complete
1ST, 2ND & 3RD RED LEDS Charging - 90% Complete
BLINKING GREEN LED.....Finishing Stage (Note: Battery Type Indicator will also blink during this stage)
STEADY GREEN LED.....Charge Complete –Float/Maintenance Mode-On for 5 min. and off for 60 min.

The green LED is illuminated whenever the charge cycle has terminated and the internal circuitry has determined the batteries to be fully charged. The green LED will blink during the finishing stage of the charge cycle. After the completion of the charge cycle, the green LED will remain on steady during the float-maintenance stage.

During this final stage current is only flowing to the battery system for 5 minutes and then current will stop completely for 60 minutes. Your system provides an equalization stage every 30 days while plugged in. If the charger is normally disconnected from A/C after completing charge, equalization can be accomplished by plugging back into A/C whenever this stage is desired. Battery manufacturers recommend that equalization is done once a month in order to further reduce sulfation on the lead plates of a battery, which helps promote longer battery life.

***NOTICE*: During this process the LEDs will go through their normal routine (Red LEDs counting up for % of charge along with the illuminated Red LED Battery Type and then the Green LED and Red Battery Type LED will blink) until the unit returns to the maintenance mode and a steady Green LED and steady Red Battery Type LED. (Not applicable to Gel Profile).**

TROUBLESHOOTING CHARGING SYSTEM

PROBLEM: No LED indicators illuminated on battery status indicator.

Solution Sequence:

1. Confirm that current is being delivered to the charger. Use a meter or test light to check the AC power supply from its source through all connecting points up to the charger.
2. Check that the AC circuit breaker (on front of the unit) is depressed.
3. Contact ParCar dealer for further assistance.

PROBLEM: The charge status indicator changes rapidly back and forth from red to green or the green LED will not illuminate after excessive charging time (24 hours or more).

Solution Sequence:

1. Disconnect AC power from the charging system. This indication may signify a possible battery problem.

2 Contact ParCar dealer for further assistance.

PROBLEM: A green LED was illuminated before disconnecting the power from the charger, but upon reconnection, red LEDs appear and remain on.

This is the normal operating procedure for the system. It indicates that a reanalysis of the battery status was initiated and after a series of steps the green LED will illuminate.

LED FAULT CODE INDICATIONS Charging System

The microprocessor is constantly monitoring the charger circuitry and will both detect and display blinking LED indications if a fault is detected. The battery type LED will be ***OFF*** during a fault code condition.

30% RED LED BLINKING .....NO BATTERY DETECTED

This indication occurs whenever the charger circuitry cannot detect a battery. The charger circuitry will not allow charge current to flow under this condition. With the AC power supply cord unplugged, check the connection to the batteries for proper polarity (black wire to negative or -). Also check for corrosion free secure connections to the battery.

30 & 60% RED LEDs BLINKING ……..…..…FORMING STAGE TIMEOUT SHUTDOWN

This indication occurs if the battery voltage has not risen above 1.75 volts per cell within the first 3 hours of charging. This indicates that a possible battery problem exists and that the charge cycle has been terminated at this point.

30, 60 & 90% RED LEDs BLINKING.....OVERALL TIMER SHUTDOWN

This indication occurs if the charger has not completed the charge cycle within the allowable factory set time period. This indicates that a possible battery problem exists and that the charge cycle has been terminated at this point.

TROUBLESHOOTING CHARGING SYSTEM (Continued)

30 & 90% RED LEDs BLINKING …..….....INTERNAL OVERTEMP SHUTDOWN

This indication occurs if the charger circuitry has detected operating temperatures inside the charger enclosure that are above factory specified levels. This could indicate that a possible charger problem exists and that the charge cycle has been terminated.

30% RED & 100% GREEN LEDs BLINKING …..…..... BULK STAGE SHUTDOWN

This indication occurs if the battery voltage does not rise properly during the Bulk Stage. This indicates that a possible battery problem exists and that the charge cycle has been terminated at this point. Please call ParCar technical support for further assistance.

***NOTICE*: Disconnecting and reconnecting the AC power supply cord will reset the charger.**

EXCESSIVELY DISCHARGED BATTERIES

***NOTICE*: Your ParCar dealer will have the equipment and experience to perform the following battery inspections.**

The charger will not charge completely dead batteries. First establish that none of the batteries have an internal fault or bad cell. If a battery has remained too long in a discharged state (i.e. 2-4 volts each), it may be internally damaged and not capable of accepting a charge and must be replaced.

If the electrolyte Specific Gravity is low (less than 1.1098 SG) or individual battery voltage is less than 5.25 volts for three cells (10.5 volts for six cells), recharge each battery with an ordinary automotive style trickle charger at a rate of 3 to 6 amps.

It is not necessary to disconnect the battery cables, as the alligator style clips can be connected to each positive and negative battery post. Follow specific charger instructions.

⚠ DANGER

To prevent a spark from igniting the gas emitted from the batteries, always disconnect the charger AC power cord first when moving the positive/negative alligator clips.

Be sure to charge all of the batteries in the set. Each battery may require two to three hours of charging to bring it back to serviceable condition. After all batteries have been individually charged, remove the automotive charger and restart charging with the on-board charger. It may require several 8-12 hour cycles for bring severely discharged batteries back to 100% charged condition. If again the charger has the RED FAULT LED flashing there is a problem with one or more of the batteries.

TIPS FOR PROLONGING BATTERY LIFE

NOTICE: **A common misconception is Deep Cycle Batteries develop a memory, lose capacity, or must be discharged until the BDI warning flashes and then recharged. Deep Cycle Wet Lead Acid Batteries are not like cell phone NiCad Batteries. Deep Cycle Batteries benefit from frequent charging and being maintained at as close as possible to a 100% state of charge. Plugging in the on-board charger overnight or when the vehicle is not in use for 3-5 or more days is encouraged.**

- Recharge batteries as soon as they become 20% or more discharged (less than 1.238 sp. gr.).
- Make it a regular habit to plug in the charger when the vehicle is not in use. Batteries may be recharged if vehicle has been driven 15 minutes or more since the previous charge.
- Make sure your electrical outlet is operational.
- Never go below 20% state of charge (or 80% discharged) without recharging immediately. Allow 14 – 16 hours of charging.
- Batteries will provide a longer life if not deeply discharged. Batteries that are regularly deeply discharged will require more work by the charger and will have a shorter life.
- For non-sealed batteries, make it a regular habit to check (and water) your batteries after charging. Always add the distilled water after charging. This will reduce the chance for overflow due to expanding water.
- Weekly equalize the battery pack.
- If the vehicle is not operated daily the Power keyswitch should be turned off. This will power down the traction control system and reduces power loss on the batteries.
- Batteries in storage may self discharge and should be recharged when the specific gravity falls below 1.238 sp. gr. or individual battery voltage is les than 5.25 volts for three cells (10.5 volts for six cells).

BATTERY REMOVAL & INSTALLATION

- Remove battery negative (-) cables and then battery positive (+) cables.
- Remove battery hold down.
- Remove batteries from vehicle.
- To install batteries, reverse the removal procedure with the negative (-) cables being attached last. Torque connections to 100 in. lbs.

SINGLE POINT BATTERY WATERING SYSTEM (If equipped)

***NOTICE*: The following information does NOT apply to sealed batteries**

This is a single point watering system for maintaining a sufficient electrolyte level in the batteries.

***NOTICE:* Do not operate this system on brand new batteries. See FIRST STEP for the initial check on the electrolyte level of new batteries. Complete 4 to 5 charge cycles before using the system.**

System is to be used only after fully charging the batteries and batteries are warm.

The fill tube assembly which is used for adding water to the battery pack consists of a fill tube, one end having a filter screen, the other having a female coupler and a rubber squeeze bulb.

Check the battery pack water level weekly by:

- Inserting the fill tube filter end in an approved water supply.
- Attaching the female coupler to the battery pack male coupler. Squeeze the rubber ball until firm which indicates that filling is complete. Immediately disconnect the couplers by depressing the push button on the female coupler. If the water supply is left connected after the filling process is finished it could lead to an overfill.

MAINTENANCE GUIDELINES

To ensure that the vehicle is kept in a safe and correct operating condition, it must be inspected and maintained on a regular basis. Proper lubrication, electrical control adjustments, safety feature checks, etc. performed at recommended intervals will help prevent damage or failure of the unit while providing optimum performance.

Follow the guidelines below to assure proper maintenance.

- Before starting any repairs or maintenance, immobilize the vehicle by turning the power keyswitch off, removing the key and setting the park brake.
- Power down the vehicle using the blue battery quick disconnect.
- Block the chassis with jack stands before working under a raised vehicle.
- Do not use flammable fluids for cleaning parts.
- Work in a properly ventilated work area.
- Regularly inspect and maintain in safe working condition the brakes, steering mechanisms, speed and directional control mechanisms, warning devices, guards and safety devices.
- Keep the vehicle in a clean condition to minimize fire hazards and facilitate detection of loose or defective parts.

MECHANICAL BRAKE SYSTEM

The mechanical brakes consist of two rear drum brakes which are self-adjusting. Be sure the brakes function properly. When brake pedal is pressed using moderate pressure, the vehicle should come to a smooth, straight stop. If the vehicle swerves, fails to stop, stops abruptly, or makes a grinding or squeaking noise, have the brake system checked. Continued moderate brake pedal pressure should be able to lock the wheels, but using lesser pressure should also permit a slow, gradual deceleration.

The parking brake is applied by depressing the parking brake pad at the top of the brake pedal which locks the brakes in place. If the brakes fail to hold the vehicle in position, contact your ParCar dealer for qualified service assistance.

BRAKE FLUID CHECK (If equipped with hydraulic system)

Check the brake fluid in the master cylinder periodically (under normal conditions, every 3 months). The master cylinder is located under the front hood. Use DOT 3 Motor Vehicle Brake fluid. Maintain fluid level within 1/4" of master cylinder filler opening.

TIRE CARE

See *Vehicle Specifications* for recommended tire pressure. Improper inflation will shorten the life of your tires and will adversely affect performance.

NOTICE: **Replacement tires must be the same size as original equipment. Increased tire load ratings are permissible but tire rating does not increase the rated load carrying capacity of the vehicle.**

WHEEL & TIRE REMOVAL/INSTALLATION

Place blocks ahead of and behind the wheels that will remain on ground. Slightly loosen lug nuts. Place a jack under the side of the vehicle in contact with the frame. Raise vehicle and remove lug nuts and wheels. To install, tighten the lug nuts evenly in a star pattern until the nuts are all seated and torque to. 65 ft. lbs. (88.1 N.m). Recheck lug nut torque with the vehicle on the ground.

NOTICE: **The wheel may become deformed if not torqued in a crossing pattern. This could cause the wheel to wobble.**

CLEANING

Wash underside to remove all dirt and debris. Do not direct high pressure water at the controller, speed switches, or tops of the batteries.

Wash body and seat with a mild detergent. Do not use abrasives (bodies are painted). Frequent washings with mild soap will preserve the finish of your vehicle. For stubborn and imbedded dirt, a soft bristle brush may be used. Tar, asphalt, creosote and the like should be removed immediately to prevent staining of paint.

NOTICE: **Do not use harsh detergents, abrasives or cleaning solvents that contain ammonia, aromatic solvents or alkaline material to clean cab.**

MAINTENANCE SCHEDULE - OWNER/OPERATOR

Item	Operation	Weekly	Monthly	Semi-Annual
Tires	Lug nuts tight.		*	
	Check tire pressure, wear, damage. dented rims.		*	
Electrical	Check electrolyte level.	*		
	Apply equalization charge to the battery pack.	*		
	As required, clean battery terminals and wash cases.	*		
	Check the general condition of the electrical system (connections, frayed/broken cables).		*	
Brakes	Check pedal & park brake operation.		*	
Body and Frame	Inspect for loose hardware (bolts & nuts).	*		
	Clean body and seats, Wash as needed.	*		
Lube	Visually check suspension and differential for leakage.		*	
Single Point Watering System (non-sealed batteries)	Add distilled water.	*		
	Check condition of tubing, couplers. Secure & leak free.		*	
	Clean filter screen.			*

MAINTENANCE SCHEDULE QUALIFIED TECHNICIAN

It is recommended that the following be performed by a trained qualified technician or your ParCar dealer.

Item	Operation	Quarterly	Semi-Annual	Annual
Tires	Front wheel alignment .		*	
Electrical	Test batteries.		*	
	Inspect motor condition and operation.			*
Brakes	Check brakes, clean, adjust, replace if needed.		*	
	Check brake fluid (when equipped)	*		
Lube	Check differential fluid level.			*
	Grease fittings.		*	
Wheel	Check wheel axle nuts for tightness & torque.		*	
	When equipped,- wheel bearings, repack, replace if needed			*

VEHICLE TROUBLESHOOTING

PROBLEM	CHECK
Will not move	Power keyswitch on. Direction Selector in desired direction. Keyswitch for loose wires or faulty switch.
	Batteries for loose terminals, corrosion, electrolyte level or state of charge.
	Motor for loose wires, open circuits or worn brushes.
Will not move with power keyswitch on and the direction selector is in the desired direction	Display for fault code or exclamation point. See Controller Troubleshooting below.
Runs slow	Batteries for loose terminals, corrosion, electrolyte level or state of charge.
	Brakes dragging
	Under inflated or flat tires.
	Wheels for binding, do not spin freely.
If these test procedures do not resolve your vehicle problem, contact your ParCar dealer for service.	

CONTROLLER TROUBLESHOOTING

CLEARVIEW DISPLAY

The AC Drive controller sends fault codes to the Multi-Function Display. For codes above the potential exclamation point in lieu of the SYSTEM OK message, or general assistance with these codes, consult the service manual or your local authorized dealer. Fault codes are stored in memory and can not be erased.

SMARTVIEW

The AC Drive controller sends fault codes to the Multi-Function Display. For code definition, or general assistance with these codes see below or consult withyour ParCar Dealer.

SMARTVIEW FAULT CODES

Level	Display	Message	Description	Recommended Action
1	F15006	No Motor Speed Signal	No speed feedback from motor	Check encoder wiring and speed measurement signal
1	F16002	Safety Case 1	Throttle appears to be stuck. This fault will clear if throttle starts to work again.	Check throttle wiring and installation.
1	F16003	Safety Case 2	Throttle appears to be stuck. This fault will latch and can only be cleared by repairing the throttle and recycling power.	Check throttle wiring and installation.
1	F17001	BDI Warning	BDI remaining charge is less than BDI Warning level	Charge battery
1	F17002	BDI Cutout	BDI remaining charge is less than BDI Cutout level	Charge battery
1	F17003	Low Battery Cut	Battery voltage is less than Under Voltage limit for longer than the protection delay	Charge battery
1	F17004	High Battery Cut	Battery voltage is greater than Over Voltage limit for longer than the protection delay	Charge battery
1	F17005	High Capacitor Cut	Capacitor voltage is greater than Over Voltage limit for longer than the protection delay	Charge battery
1	F17006	Vbat below rated min	Battery voltage is less than rated minimum voltage for controller for longer than 1s. NOTE: This fault is sometimes seen at power down.	Charge battery
1	F17007	Vbat above rated max	Battery voltage is greater than rated maximum voltage for controller for longer than 1s.	Charge battery
1	F17008	Vcap above rated max	Capacitor voltage is greater than rated maximum voltage for controller for longer than 1s.	Charge battery
1	F17009	Motor in low voltage cutback	Motor control has entered low voltage cutback region.	Charge battery
1	F17010	Motor in high voltage cutback	Motor control has entered high voltage cutback region.	Charge battery
1	F18001	Device too cold	Low heatsink temperature has reduced power to motor	Allow controller to warm up to normal operating temperature.

SMARTVIEW FAULT CODES (Continued)

1	F18002	Device too hot	High heatsink temperature has reduced power to motor	Allow controller to cool down to normal operating temperature.
1	F18003	Motor in thermal cutback	High measured or estimated motor temperature has reduced power to motor	Allow motor to cool down to normal operating temperature.
1	F18004	Motor too cold	Low Measured temperature has reached -30deg	Check motor thermistor connection or allow motor to warm up.
1	F11101	Encoder Alignment Warning	Encoder is not aligned properly.	Ensure encoder offset is correctly set or re-align encoder
2	F22001	Parking Brake Switch Fault	Valid direction selected with parking brake engaged while attempting acceleration.	Release parking brake
2	F22002	Two Direction Fault	Both the forward and reverse switches have been active simultaneously for greater than 200 ms.	Check vehicle wiring and reset switches
2	F22003	SRO Fault	FS1 active for user configurable delay without a direction selected.	Deselect FS1
2	F22004	Sequence Fault	Any drive switch active at power up.	Deselect all drive switches
2	F22005	FS1 Recycle Fault	FS1 active after a direction change and FS1 recycle function enabled	Deselect FS1
2	F25001	Motor Overspeed		
2	F25002	PST Fault	An issue has occurred with the PST unit	Check PST unit
2	F26001	Throttle Fault	Throttle value is greater than 20% at power up.	Release throttle
2	F27002	Entering Cutback	Controller has entered thermal or voltage cutback region	Check for temperature or voltage cutback condition and take appropriate action
2	F28001	Cutback	Thermal or voltage cutback factors have reduced below user defined levels.	Check for temperature or voltage cutback condition and take appropriate action
3	F35002	Motor Open Circuit Fault	Motor terminal is open circuit or disconnected from controller	Check motor wiring. Check controller condition
3	F35003	No Motor Speed Signal	No speed feedback from motor	Check encoder wiring and speed measurement signal
3	F37003	Power Supply Critical	Battery voltage has dropped below critical level	Check controller voltage supply

TOWING YOUR VEHICLE

***NOTICE*:** ParCar does not recommend towing this vehicle.

TRANSPORTING YOUR VEHICLE

⚠WARNING

- **Use trailers specifically designed to carry your ParCar vehicle which meet all federal, state and local requirements.**
- **Secure vehicle to the trailer following trailer manufacturer's instruction.**
- **The key should be removed from the vehicle, the parking brake firmly locked, and the wheels blocked.**
- **On vehicles equipped with high or wide additions or accessories be certain they are secured properly to prevent loss or damage while trailering.**
- **Do not allow people on the trailer or in vehicle being towed.**
- **Avoid sudden starts, sudden stops, and tight turns when towing.**
- **When transporting on a trailer, normal road speed of the tow vehicle should be reduced.**
- **Remove the vehicle windshield and secure the seat bottom before transporting on a trailer.**

BATTERY PREPARATION FOR VEHICLE STORAGE

Before storage make sure batteries are fully charged, for non-sealed batteries make sure the electrolyte is full in all cells. Clean the batteries and connections as described earlier.

The charger has the capability to test and recharge batteries during storage. Leave the batteries connected and the charger plugged into a reliable AC source.

If the on-board charger is not used the batteries will "self-discharge" during storage and recharging will be necessary. Below is the recommended frequency for recharging.

STORAGE TEMPERATURE	CHARGE AT
Below 4^0 C (40^0 F)	Every 6 months
4^0 C - 16^0 C (40^0 – 60^0 F)	Every 2 months
Above 16^0 C (60^0 F)	Once a month

The voltage or specific gravity of the electrolyte should be checked every 6 to 8 weeks using a voltmeter or hydrometer.

After charging, disconnect the batteries.

BATTERY PREPARATION FOR VEHICLE STORAGE (Continued)

NOTICE: Batteries in a low state of charge will freeze at higher temperatures than fully charged batteries. Do not attempt to charge a battery that is frozen or if battery case is excessively bulged. Properly dispose of battery, because frozen batteries can explode.

The table below indicates freezing points of batteries at different specific gravities.

SPECIFIC GRAVITY	FREEZE POINT ^{0}F/^{0}C
1.260	-70/-57
1.230	-39/-38
1.200	-16/-26
1.117	-2/-19
1.110	+17/-8

NOTICE: Specific gravity readings are at 80^0 F. Values need adjustment for electrolyte temperature. Reduce .004 for every 10^0 F below 80^0 F. Increase by that amount for every 10^0 F above 80^0 F.

VEHICLE PREPARATION FOR STORAGE

Store the vehicle in a cool place.

Maintain tire pressure at recommended PSI.

Grease suspension and continue quarterly lubrication during storage period.

Clean vehicle body, seats, battery compartment and vehicle underside.

Do not engage park brake. Block wheels to prevent movement.

***NOTICE:* Make sure power keyswitch is in the OFF position.**

RETURNING VEHICLE TO SERVICE

- If necessary, connect the battery pack and fully recharge batteries.
- Check tire pressure and readjust if necessary.
- Perform Pre-Operational Checklist.

For vehicles with a single point watering system:

- After the batteries have been fully charged, connect the system to its water supply for 3-5 seconds then disconnect regardless of whether or not the batteries are completely full.
- Return the vehicle to its regular service.
- Place the vehicle back into its regular watering schedule (waiting at least 1 week until next watering).

LIMITED WARRANTY STATEMENT

We warrant to the original consumer purchaser or lessee that our Passenger Vehicle will be free from defects in factory materials and workmanship under normal use and service in a non-commercial application for the period stated below from date of purchase subject to the terms, provisions and exclusions contained herein.

1. Lifetime – Frame:
   A lifetime vehicle warranty on the frame. Damage due to rust, corrosion or abuse is specifically excluded.

2. 5 Years - Rhino-Tuff^{sm} Body Panels:
   A five (5) year vehicle warranty of the Rhino-Tuff front, mid & rear body panels. Damage due to accident or collision is specifically excluded.

3. 24 months – Parts and Labor on Components:
   ParCar warrants parts and labor to repair defective components for twenty-four (24) months from date of purchase, subject to the following terms and conditions.

4. Excluded Components:
   Batteries and tires are excluded from this warranty as they are warranted by their respective manufacturers. Your authorized ParCar dealer will assist in processing these warranties, if necessary. Consequential damage caused by defective batteries or tires are also excluded from this warranty.

5. Additional Conditions:
   ParCar will warrant all ParCar replacement parts provided under this warranty. All ParCar parts replaced under warranty become the property of ParCar and, if requested by ParCar, must be returned to the factory for inspection.

   (a) Any other expense incurred in obtaining warranty repairs, including transportation and labor, are the responsibility of the purchaser, unless otherwise stated in this warranty.

   (b) To qualify for warranty coverage, the selling dealer must complete the warranty registration form online within ten (10) days after purchase or lease. If this information is not on file with ParCar, purchaser must provide proof of date of purchase with any warranty claim.

   (c) To obtain warranty service, you must return your vehicle during the warranty period to any authorized ParCar vehicle repair facility. Dealers are able to provide service during their normal business hours and within a reasonable time. Further information regarding warranty service may be obtained from ParCar by writing our Customer Service Department, Custom Carts - ParCar, 2505 Industrial Street, Leesburg, FL 34748.

   (d) Any subsequent changes, updates or improvements in vehicle design and equipment shall not apply to vehicles previously manufactured or purchased.

6. This Warranty Shall Not Apply to Damage or Cost Caused By:
   (a) Failure to operate, maintain and service vehicle, as specified in the applicable Owner's Manual.

   (b) Abuse, misuse, neglect, accident, collision and operation at other than specified design speed or rated capacity.

   (c) Alteration or repair outside of factory specifications, including damage caused by unauthorized installation of after market options or accessories.

LIMITED WARRANTY STATEMENT (Continued)

(d) Use of components, including fluids or batteries, not specified in the applicable Owner's Manual, or avoidable with the proper use of specified ParCar components, including oil or batteries.

(e) Fading, deterioration or weathering of seats, fabric enclosures, floormats, bag racks, bag straps, body parts, paint or chrome caused by ordinary wear and tear or exposure.

(f) Charges incurred to transport any vehicle to and from an authorized dealer for warranty service, and or travel charges incurred by an authorized dealer to or from the vehicle location to perform warranty service.

7. Warranty Does Not Apply To:
Normal maintenance shown in the Owner's Manual which the purchaser is expected to perform including, but not limited to, brake adjustment, battery maintenance (cleaning, maintaining proper fluid levels and battery charge), lubricant replacement in differential assemblies, tune up components and wear items such as bearings, brake pads and brake shoes are not covered by this warranty.

8. Use of Non-Genuine Parts:
ParCar dealers are independently owned and operated, and may sell products other than those provided by ParCar. Therefore, you should understand that PARCAR IS NOT, AND CANNOT, BE RESPONSIBLE FOR THE QUALITY, SUITABILITY OR SAFETY OF ANY NON-GENUINE PARCAR PART, ACCESSORY OR DESIGN MODIFICATION, INCLUDING LABOR, WHICH MAY BE SOLD AND/OR INSTALLED BY DEALERS OR DAMAGE CAUSED THEREBY.

9. Sole Remedy, No Other Warranty:
The purchaser and ParCar expressly agree that the remedy of replacement or repair of the defective vehicle or component thereof, is the exclusive and sole remedy of the purchaser. ParCar makes no other representation or warranty of any kind, and no representative, employee, distributor or dealer of ParCar has the authority to make or imply any representation, promise or agreement which in any way varies from the terms of this warranty.

THERE ARE NO OTHER EXPRESS WARRANTIES ON YOUR VEHICLE BEYOND THOSE SET FORTH HEREIN AND NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS. TO THE FULLEST EXTENT ALLOWED BY LAW, PARCAR AND ITS DEALERS SHALL NOT BE LIABLE FOR LOSS OF USE, INCONVIENCE, LOST TIME, COMMERCIAL LOSS OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES OR ECOMOMIC LOSS.

10. Vehicles Sold Outside of the United States:
In the case of vehicles sold outside the U.S.A., defective parts must be returned to the selling dealer and transportation charges prepaid by the purchaser. The dealer will then replace all parts which his inspection shall show to be defective under the warranty. ParCar assumes no liability for the dealer's labor charges, if any, or any other expenses. For further information concerning export, please contact Custom Carts - ParCar, 2505 Industrial Street, Leesburg, FL 34748 U.S.A. Attn: Customer Service Department, (844) 727-2271.

11. State Specific Rights:
Some states do not allow the exclusion or limitation of incidental, consequential or other damages, or limitation on how long an implied warranty lasts, so the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

RECORD OF SERVICE HISTORY

Date	Dealer	Concern	Repair

DEALER INFORMATION

Name: _____

Address: _____

City/State: _____

Sales #: _____

Service #: _____

ADDITIONAL NOTES

_____

_____

_____

_____

_____

_____

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_____

PARCAR

2505 Industrial Street • Leesburg, FL 34748
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