2013 Owner's Manual

T-SPORT® NEV

Neighborhood Electric Vehicle (NEV)

This Manual is effective as of January 15, 2013

T-SPORT® NEV

Manufactured by:

American Custom Golf Cars, Inc. *(ACG)*

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Notice

The **American Custom Golf Cars, Inc**., "**ACG** *Limited Warranty*" for owners of the **T SPORT NEV** is included with this manual.

No other warranties, expressed or implied, are contained herein.

ACG and your authorized representative checked this vehicle before it was delivered to you.

This vehicle does conform to Federal Motor Vehicle Safety Standard FMVSS #500 for LSV (low-speed vehicles) as of date of manufacture, and is equipped for operation on public streets and roads.

While the vehicle conforms to FMVSS #500 for low-speed vehicles you must still check your individual state laws to make sure there are no other additional requirements to make your vehicle eligible for operation on public streets or roads.

T SPORT NEV meets the minimum requirements for LSV as specified in FMVSS #500 for low-speed vehicles, as of date of manufacture as shown on the vehicle's "*Certification Label*".

ACG is not liable for any additional requirements or modifications that your individual state may require.

ACG is not liable of errors in this manual or for incidental or consequential damages that result from the use of the material in this manual. The information contained in this document including the warranty information contained in separate "*Warranty*" document is subject to change without notice.

ACG reserves the right to make design and equipment changes to vehicles without obligation to make these changes on units sold prior to the changes being made.

Throughout this manual, the words "LSV" or "NEV" and "vehicle" are used interchangeably.

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Foreword

Thank you for choosing the **T-SPORT®** **NEV** for your local and community transportation needs.

Please protect your investment to make sure that your **T-SPORT®** **NEV** will provide you with years of reliable performance.

Your safety is important to us, so please make sure that prior to operating the vehicle you have read the following instructions and warnings.

If you rent or loan your vehicle to others, please make sure that they have read this manual prior to operating this vehicle.

Please consider this manual to be a permanent part of this vehicle and if it is sold, please make sure that the new owner receives the manual so that they will have the operating information that it contains as well.

⚠ WARNING

THIS PRODUCT CONTAINS OR EMITS CHEMICALS OR SUBSTANCES THAT HAVE BEEN DETERMINED BY THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

Introduction

ABOUT THIS MANUAL

Thank you for purchasing your **T-SPORT® NEV** vehicle manufactured by:
American Custom Golf Cars, Inc. (ACG)

Your vehicle is designed to operate exclusively on battery power.

It is a "*Zero Emission Vehicle*" (ZEV).

The ideal application for a battery-powered Neighborhood Electric Vehicle (NEV) occurs when the daily driving pattern is predictable and the distance is relatively short.

The **ACG** company objective includes customer safety and product satisfaction.

This "*Owner's Manual*" is designed to acquaint you with the proper and safe operation of your **ACG vehicle**.

Please take the time to read and understand the manual before operating your vehicle.

Maintenance schedules and general care instructions are included in the Operation and Maintenance section.

This manual is applicable to the following **ACG** models:

2013 T-SPORT® NEV

If any questions arise after reading the manual, please contact **ACG Customer Service** at **(909) 597-2885.**

Please have your Vehicle Identification Number (VIN) and date of purchase information available.

NOTE:

All information and specifications in this "*Owner's Manual*" are current at the time of printing. However, due to ACG's policy of continuous product improvement, we reserve the right to make changes, at any time, without written notice or obligation.

For the latest version please visit **www.acgcars.com**, and click on About ACG, Current ACG Owners, and Owners Manuals. Then select the Model and Model Year of your vehicle.

SAFETY PRECAUTIONS

(Electric only)

The EV system uses high voltage up to 58V DC and/or 240 V AC.

The system can be hot during and after operation and/or during charging. Be careful of both the high voltage and the high temperature.

Obey all the caution and warning labels that are attached to the vehicle.

Never touch, disassemble, remove or replace high-voltage parts and cables as well as their connectors.
High-voltage cables are orange. Touching, disassembling, removing or replacing those parts or cables can cause severe burns or electric shock that may result in serious injury or death.

To avoid personal injury, do not touch high-voltage wiring, connectors or high-voltage parts (inverter unit, traction battery, battery charger, etc.).

If exposed electric wires are visible inside or outside of your vehicle, an electric shock may occur. Never touch the electric wires.

If you discover a leak or damage to any traction battery, contact a ACG Dealer immediately. Never touch fluid leaks inside or outside the vehicle.
The leak may be acid from the traction battery. If it contacts your skin or eyes, wash it off immediately with a large amount of water.
Get immediate medical attention to help avoid serious injury.

If a fire occurs in the EV vehicle, leave the vehicle as soon as possible. Never use a fire extinguisher that is not meant for use on electric fires. Using even a small amount of water may also be dangerous.

If your vehicle needs to be towed, do it with the rear wheels raised. If the rear wheels are on the ground when towing, the motor may generate electricity. This may damage the components of the EV system and cause a fire.

SEE YOUR OWNER'S MANUAL FOR FURTHER DETAILS.

ACG recommends having maintenance and repairs for your Electric Vehicle performed by an authorized ACG T-SPORT certified dealership.

To locate your nearest authorized ACG Dealership, contact the ACG, Inc. at:
(909) 597-2885

Insurance Notice

Your Insurance may not provide coverage for accidents involving the use of this vehicle. To determine if coverage is provided you should contact your insurance company or agent.

Warranty Registration

The separate **"*Warranty*"** document includes a **"*Warranty Registration Card*".**

Your new **T-SPORT® NEV (**Neighborhood Electric Vehicle**)** comes with a **Twelve (12) Month Limited Warranty.**

The Warranty begins from the date that the **T-SPORT® NEV** is purchased from an approved Dealer or Distributor of **American Custom Golf Cars, Inc.** products, provided that the **"*Warranty Registration Card*"** is received by **American Custom Golf Cars, Inc.** within 45 Days of the purchase date of the vehicle.

If the **"*Warranty Registration Card*"** is not received within 45 days of purchase date**, the Warranty commencement date will be the vehicle production date.**

Please protect your Warranty and mail your "*Warranty Registration Card*" today!

There are no other expressed warranties on your **ACG vehicle** beyond those set in the accompanying "*Warranty*" document, and no implied warranties of merchantability or fitness to the full extent allowed by law.

ACG and its dealers shall not be liable for loss of use, inconvenience, lost time, commercial loss or any incidental, consequential or other damages.

A separate "***Tire Registration Card***" is provided for Warranty and potential Tire Recall campaign, the Tire Registration is required by Federal Law under the TREAD Act.

Please fill it out completely and mail it to ACG today!

Thank you !

General Warnings

1. This "*Owner's Manual*" 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.

2. When charging the vehicle, be sure that the key switch is in the "**OFF**" position. If the key is left in the "**ON**" position, it may damage the charger or the NEV.

3. Your vehicle is equipped with an on-board UL- listed charger. When charging your NEV, please be sure to use a proper, grounded cord to provide power to the charger. Please be sure to raise the Front Bench seat of the vehicle to allow for ventilation of the charger so that it does not overheat.

Please refer to the "*CHARGING PROCEDURES*" section in this manual for further information on your NEV charging.

4. Always obey all traffic regulations when operating the vehicle.

5. When stopping and leaving the vehicle:
   a) Make sure vehicle has come to a complete stop.
   b) Switch "*Direction Control Switch*" to the "***Neutral***" position **N**.
   c) Engage the parking brake
   d) Turn the "*Key Switch*" to "**OFF**" position (vertical) and remove key.

6. Wear safety glasses or approved eye protection when servicing the vehicle. Wear a full-face shield and rubber gloves when working with the batteries.

7. Use insulated tools when working around batteries or electrical connections. Use extreme caution to avoid shorting of components or wiring.

8. Improper use of the vehicle or failure to properly maintain it could result in decreased vehicle performance or severe personal injury.

9. Any modification or change to the vehicle that affects the stability or handling of the vehicle or increases maximum speed beyond factory specifications, could result in severe personal injury or death.

10. Prior to servicing Vehicle:
    a. Chock the wheels.
    b. Turn the "*Key Switch*" to "**OFF**" position and remove the key.
    c. Disconnect battery cables, **negative** (**--**) cable first.

WARNING!

1. If renting or loaning the vehicle, make sure that the driver is familiar with all controls and operating procedures before allowing the vehicle to be driven.

2. Any modification or change to the vehicle that affects the stability or handling of the vehicle, or increases maximum vehicle speed beyond factory specifications, could result in severe personal injury or death.

3. Do not switch the "*Direction Control Switch*" while the vehicle is moving. To avoid damaging the vehicle or injuring an unsuspecting passenger, always bring the vehicle to a full and complete stop before switching from **D** (**Forward)** to **R** (**Reverse)**.

4. To avoid unintentionally starting or rolling the vehicle:
   A). Set the "*Parking Brake*",
   B). Turn the "*Key Switch*" to the "**OFF**" position (vertical),
   C). Remove keys prior to leaving the vehicle.

WARNING!

Any modifications or alterations to this vehicle could seriously affect its road worthiness and safety and may lead to an accident resulting in serious injury or death.

WARNING!

You can be badly injured working on an electric vehicle. Take your vehicle to your ACG dealer or call ACG Customer Service at **(909) 597-2885** for your service needs.

SAFE OWNERSHIP OF ACG NEIGHBORHOOD ELECTRIC VEHICLES

ACG pure battery electric vehicles are different from vehicles you might be accustomed to owning. Special precautions should be followed when owning and operating an **ACG vehicle**.

Please read this "*Owner's Manual*" and pay particular attention to the Cautions and Warnings in this Manual, as well as those placed on the vehicle in various locations.

In general, ACG NEV's are designed to meet U.S. Federal Government safety requirements for a special class of vehicle known as "Low Speed Vehicles" (**LSV**).

By this very name, and implicit in these safety requirements, these vehicles are intended only for use at low speed, up to 25 mph, and on public roads (governed by individual state laws) where the speed limits are correspondingly low.

Specific to **ACG vehicles**, the following safe habits should always be followed:

• **ACG vehicles** are open vehicles. For this reason, safety belts should always be worn by all occupants to prevent being thrown from the vehicle during operation. If your **ACG** is equipped with optional canvas or plastic doors, these were designed and are intended only to keep wind and water out of the vehicle and should not be relied upon to keep occupants in the vehicle or to protect them in case of collision.

• **ACG vehicles** are not designed to meet any collision or roll-over requirements. Therefore, you should always drive your **ACG vehicle** in a safe manner while being alert to potential dangerous situations around you. As with all motor vehicles, never drink alcohol and attempt to drive an **ACG vehicle**.

• Operate an **ACG vehicle** only on public or private roads where the speed limits are appropriate for low speed vehicles (individual state laws vary, so check with your DMV) and the traffic is light.

• You should never operate an **ACG vehicle** so that you are an obstacle and become an annoyance for faster moving traffic.

• **ACG vehicles** are designed to be recharged from a standard household **120 VAC-15 Ampere** electrical outlet that is ground-fault protected. Charging from a circuit of lesser capacity and/or using a cord from the outlet to the **ACG vehicle** that is not sufficient in wire gauge (AWG) could create a fire hazard.

Please consult "*Charging Procedures Manual*" for the proper extension cord gauge which depends on its length.

• The voltage in an **ACG** vehicle battery pack (the battery pack is what you charge and provides the "fuel" to the ACG's electric drive system) is **48 Volt DC** and is sufficient to cause death by electric shock - electrocution.

For this reason, **ACG** owners should **NEVER** attempt to do any maintenance or repair work on their **ACG** vehicle's electric drive system, including the battery pack, unless they have had special training. The one exception is inspection and refilling, if necessary, of the distilled water in flooded type batteries that can be ordered with **ACG vehicles**.

• In this "*Owner's Manual*", the above safe ownership and operation habits will be pointed out to you as the different aspects of owning and operating an **ACG vehicle** are explained. Please read, understand and abide by them for years of safe operation and enjoyment of your **ACG Neighborhood Electric Vehicle**.

Warnings, Cautions and Notes

Throughout this "*Owner's Manual*" you will find the words "**WARNING!**" and "**CAUTION!**" These serve as reminders that attention is required.

"**WARNING!**"

Indicates an immediate hazard, which could result in an accident causing bodily injury.

"**CAUTION!**"

Identifies something that could result in damage to your vehicle.

"**NOTE**"

Notes are for your information and to make procedures more easily understood.

"**IMPORTANT !**"

Important notes are for your information and to make vehicle functionality more easily understood. They need to be followed so that vehicle operates properly and as intended by design.

Driving and Alcohol

Your ability to drive your ACG vehicle can be seriously impaired with blood alcohol levels far below the legal minimum. If you are drinking alcohol, don't drive. Ride with a designated non-drinking driver, call a cab, or use public transportation.

WARNING!

Driving after drinking alcohol can lead to an accident. Your perceptions are less sharp, your reflexes are slower, and your judgment is impaired when you have been drinking. Never drink alcohol and drive.

WARNING!

Drinking alcohol can seriously impair your ability to operate this vehicle.

SAFETY INFORMATION

WARNING!

Your vehicle is battery powered. If handled improperly, batteries can be dangerous. Follow the precautions provided on pages 53 to 72 during charging operations to avoid personal injury or damage to electrical components in the vehicle.

• Read the Owner's Manual before operating this vehicle.

• Charge vehicle in a well-ventilated area only.

• Keep children away from the vehicle during charging.

• Batteries can emit explosive hydrogen gases when charging. Keep sparks and flames away from the battery area of the vehicle. Tools, wires and metal objects can cause sparks when shorted across the battery connections. Follow all instructions carefully when dealing with batteries.

• The batteries in the ACG NEV are six (6) 8-Volt lead acid batteries. They are however connected in a pack configuration to produce **HIGH VOLTAGE DC** (48 volts).

These batteries are either Flooded electrolyte type or Gel electrolyte type and are selected specifically to optimize the operation and performance of your vehicle.

Never use or substitute any battery other than the original factory approved batteries.

Electrolyte can leak from damaged or defective flooded batteries!

Avoid contact with skin, eyes or clothing.

• Batteries contain acid, which can cause severe burns. If battery fluid comes in contact with your skin, flush the affected areas with water for at least 15 minutes and then seek medical assistance.

• Internal ingested: Get medical assistance as soon as possible.

• Contact with eyes: Flush with water and get medical assistance as soon as possible. While you are being driven to get medical assistance, continue to rinse your eyes by using a sponge or soft cloth saturated with water.

CAUTION!

When checking the electrolyte level in flooded batteries, be careful to never touch the battery terminals.

WARNING!

Battery posts, terminals, and related accessories contain lead and lead compounds.

Always wash hands after handling the battery.

WARNING!

Improper handling of high voltage wiring, batteries, or control systems could result in serious or fatal injury by electric shock.

Only qualified technicians should repair or access high voltage wiring, battery packs, and associated systems.

Roll over Warning

Because of the higher center of gravity and the narrower track of this vehicle, it may roll over when some other vehicles may not.
Do not attempt sharp turns or abrupt maneuvers or other unsafe driving actions that can cause loss of vehicle control and possible roll over.
Failure to operate this vehicle safely may result in an accident, roll over, and serious injury or death.
Because of its open-body construction, your vehicle offers less protection than closed vehicles in the event of an accident.

CAUTION!

The top is not designed to carry any additional loads such as roof racks, spare tires, building, hunting, or camping supplies, and/or luggage, etc.
Also, it was not designed as a structural member of the vehicle, and thus cannot properly carry any additional loads other than environmental (rain, snow, etc.)

Controls and Indicators

Key Switch

The "*Key Switch*" is mounted on the dash to the right of the steering column.
It has two positions:

1. **OFF position**- There is no power to vehicle. (*Key is Vertical as shown in picture below*)
2. **ON position**- vehicle is **ON** and can be driven. (*Key is turned clockwise 45 degrees*)

WARNING!

Never turn the "*Key Switch*" to the "**OFF**" position while the vehicle is in motion. This could lead to loss of speed control and loss of control of the vehicle. This can cause a serious accident.

Direction Control Switch

The "*Direction Control Switch*" is a 3 position "rocker" switch that is located on the vehicle dash panel to the right of the vehicle center and to the right of the "*Lights Switch*". The switch is labeled "**Direction**".

There are three (3) distinct positions: **D**, **N** and **R** and so indicated on label to the Right of the switch.

(*Switch shown in **"Neutral"** position*)

1.) **D** **Drive = FORWARD** - To operate the vehicle in the forward direction, press the rocker switch at the top ⇧ indicated by **D,** when the "*Key Switch*" is in the "**ON**" position (horizontal) the "*Direction Control Switch*" position is indicated on the vehicle display by showing **D** at the top Left corner of the display.

2.) **N** **NEUTRAL** - When the switch is in the central position the vehicle is in "Neutral" and will not move when the accelerator pedal is depressed. When the "*Key Switch*" is in the "**ON**" position (horizontal) the "*Direction Control Switch*" position is indicated on the vehicle display by showing **N** at the top Left corner of the display.

3.) **R** **REVERSE** - To operate the vehicle in the reverse direction, press the rocker switch at the bottom ⇩ indicated by **R,** when the "*Key Switch*" is in the "**ON**" position (horizontal) the "*Direction Control Switch*" position is indicated on the vehicle display by showing **R** at the top Left corner of the display. Your vehicle has been equipped with a reverse warning beeper so that when the vehicle is in reverse you will hear a loud beeping sound which is signaling that it is in "Reverse".

CAUTION!

Always bring the vehicle to a complete stop before changing the position of the "*Direction Control Switch*".

IMPORTANT!

The vehicle "*Direction Control Switch*" MUST be initially in the neutral N central position when you first turn the "*Key Switch*" to the "ON" position; thereafter you can select forward drive D or the reverse R .

The car will not move unless you first start in neutral N !

Accelerator Pedal

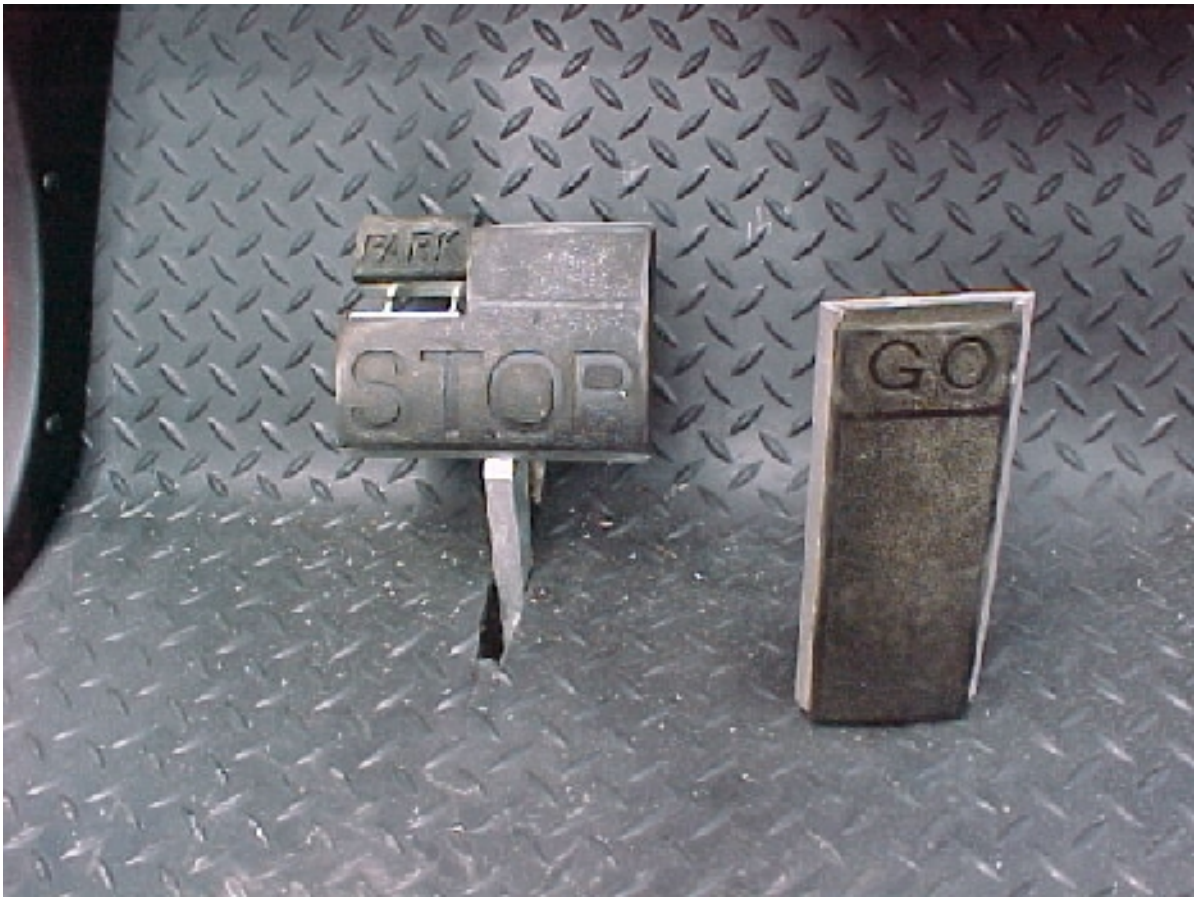
The "*Accelerator Pedal*" is the pedal on the right, with the word "**GO"** molded into it. The operation of the accelerator pedal differs from that of an Automobile. When the "*Key Switch*" is in the "**ON**" position, depressing the accelerator pedal will release the parking brake. As the accelerator pedal is depressed speed will increase until full speed is reached. When you release the accelerator pedal the power to the motor is cut OFF and the motor will stop running causing the vehicle to coast.

WARNING!

The NEV will not stop automatically when the "*Accelerator Pedal***" is released. You must depress the "***Brake Pedal***" in order for the vehicle to come to a stop or to slow down rapidly.**

Brake Pedal

The "*Brake Pedal*" is the large pedal on the left with the word "**STOP"** molded into it. To slow or stop the vehicle, release the "*Accelerator Pedal*" and then depress the brake pedal with your foot until the NEV has come to a complete stop or the vehicle has slowed to your desired speed.



Park Brake Pedal

The "*Park Brake Pedal*" is the small raised portion in the upper left corner of the "*Brake Pedal*". It has the word "**PARK"** molded into it.

To set the park brake, depress the "*Brake Pedal*" firmly and tilt the park brake portion of the pedal forward with your foot.

WARNING!

The "*Park Brake***" will release automatically when either the "***Accelerator Pedal***" or "***Brake Pedal***" is depressed. The park brake has multiple locking positions and should be firmly pressed and locked to prevent the vehicle from rolling.**

Light Switch

The "*Light Switch*" turns the headlights and taillights on and off.

The "*Light Switch*" is located on the Dashboard to the right of the steering column and to the right of center of the dashboard and to the left of the "*Direction Control Switch*". The switch is labeled "**LIGHTS**".

It is also identified by SAE/ISO "Lights" icon.

It is a 2 position switch:

1.) **ON** - When the top portion of the switch is depressed the lights are "**ON**".
2.) **OFF** - When the bottom portion of the switch is depressed, the lights are "**OFF**".

(*Light switch shown in "**OFF"** position*)

Turn Signal Lever Switch

The Turn Signals are activated by Lever Switch located on Left side of steering column below Steering Wheel.

It is a 3 position switch.

1.) **RIGHT** - When the Lever is pushed UP (*Clockwise*) – the Right Lights Flash.
2.) **OFF** - When the Lever is Horizontal, the Turn Signal lights are "**OFF**".
3.) **LEFT –** When the Lever is pushed down (*Counter Clockwise*) – the Left Lights Flash.

NOTE:
The system DOES NOT have a "self-canceling" feature; return the Lever to the horizontal "**OFF**" position after completing the intended Turn or Lane Change!

*(Turn Signal Lever Switch shown in "**OFF** "position)*

Turn Signal Directional Indicators

- The **GREEN** Light on Left of the Display will flash when Left Turn Signal is activated (as shown above).

- The **GREEN** Light on Right of the Display will flash when Right Turn Signal is activated

Display

The **T-SPORT®** **NEV** LCD display has following functions:

- **Battery State of Charge (SoC)** shown on bar graph at right of the screen and as percent % at top of the bar graph (shown above as 88%)
- **Trip** Distance Traveled in miles in NN.N format (shown above as 90.6 mi.)
- **Odometer** TOTAL Distance Traveled in miles in NNNN.N format (shown above as 231.9 mi.)
- **Vehicle Speed** in MPH and KPH shown on semi elliptical bar graph (shown as 0 MPH/KPH above)
- **Direction** – Monitors the position of the “Direction Control Switch” and shows:
    - **D** for Forward Drive
    - **N** for Neutral (as shown above)
    - **R** for Reverse

For additional display features please refer to following section.

Display Panel - Battery State of Charge (SoC)

IMPORTANT INFORMATION

Battery Percent Charge Information on SEVCON Display

The Battery charge level indicates the relative state of charge of the Traction Battery and NOT the remaining driving range of the vehicle.

Its algorithm is based on the PEAK Traction Battery Pack Voltage, which in turn calculates the APPROXIMATE charge of the Traction Battery.

The indicator may not always show 100% when the vehicle is first turned on even if the On-Board **Delta-Q** charger indicates 100% or full charge condition.

(Green LED ON – see *Charging Procedure* in *Owner Manual* for more detail).

This condition is not a defect as the computerized “smart” **Delta-Q** On-Board Charger may under certain conditions stop the charging before achieving the maximum potential voltage.

The ambient and battery temperatures are monitored by the charger and the charge cycle is automatically terminated based on internal charge algorithm that is matched to the specific type of Battery, which is used in your vehicle.

The charge algorithm is designed to maximize the battery life and to prevent battery damage by overcharge.

Initially when the vehicle is FIRST driven after delivery or whenever Traction Battery is serviced, the vehicle MUST be driven so that a discharge level of 69% or less is achieved, and the Traction Battery MUST BE FULLY CHARGED thereafter, in order for the State of Charge bar graph indicator in the **SEVCON** Display to self reset to 100% indication.

If the Traction Battery is not deeply discharged (to below 69%) the State of Charge will generally not indicate more than 80% even if the On-Board **Delta-Q** Charger indicates FULLY Charged condition.

For long battery service life, the vehicle should not be operated when the indicated Charge Level is 20% or less, and need not to be re-charged if the Display Indication is 80% or more.

Display Screen – Other Functions

Main Screen

Main screen will display **Direction**, **Speed** and **Battery Charge Level** both on *Bar Graph* as well as in *Percent (%)* of full charge, it also displays **Trip** (*trip distance in miles since Trip meter re-set*) and **Odometer** (*total vehicle mileage traveled*).

Trip meter re-set

To re-set the Trip mileage counter to ZERO, push and hold the lower arrow button [↓] .

Low Water Warning

If the low battery water warning icon appears please check the water level in all batteries.

To clear the low battery water warning icon push and hold the upper arrow button [↑] .

NOTE:

The vehicle MUST be in neutral (N) when you first turn the key "ON"; thereafter you can select forward (F) or reverse (R). The car will not move unless you start in neutral (N).

To proceed to a 2nd Screen push center arrow button [↵] once.

2nd Screen

VEHICLE STATUS MONITOR

Section A

Battery shows Battery Nominal Voltage
Trac Drive Status shows current status

Section B

1. Cont. Temp. (*Controller Temperature*)
2. Motor Volts
3. Motor Amps
4. Motor RPM (Rotations Per Minute)
5. Motor Torque in Percent (%)

These values will change as soon as you start driving the vehicle. This will also let you monitor and diagnose the condition of the motor and controller .

To proceed to a 3rd Screen push center arrow button [↵] once.

3rd Screen

VEHICLE INPUTS MONITOR

on this screen all switch and input signal conditions are displayed:

Forward	**Reverse**
FS1	**Seat**
Drv Select 1	**Drv Select 2**
Hand Brake	**Foot Brake**
Inch FWD sw	**Inch REV sw**

Note:

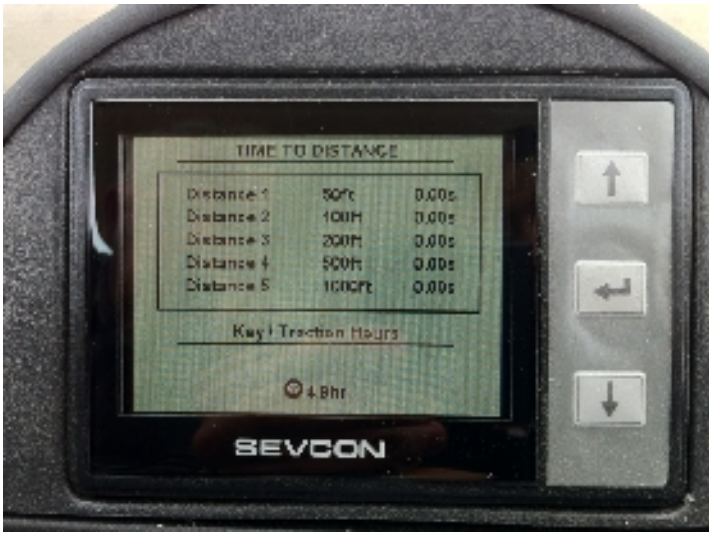
Drive profile #2 (Drv Select 2) is only used for testing Purpose to see the Range of motor on the controller.

Features not used:

Seat
Hand Brake
Inch FWD sw
Inch REV sw

To proceed to a 4th Screen push center arrow button [↵] once.

4th Screen



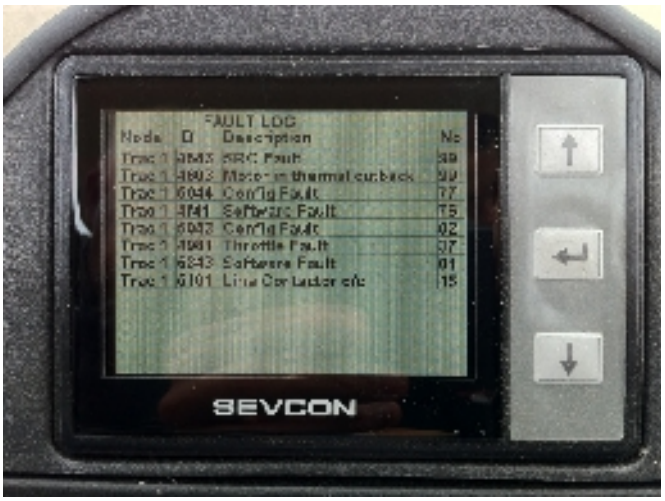
TIME TO DISTANCE

This screen displays the acceleration of the vehicle from 0-1000 feet and will automatically record the performance of the vehicle.

It also displays the number of hours the vehicle was driven.

To proceed to a 4th Screen push center arrow button [↵] once.

5th Screen



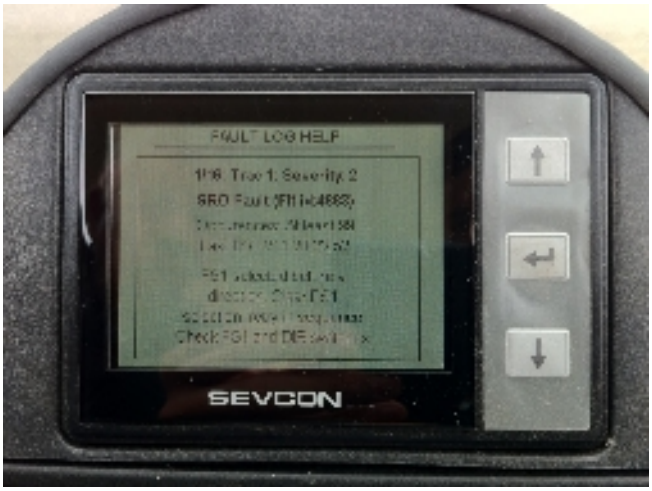
FAULT LOG

Log of all faults that have ever possibly occurred on the vehicle.

The first 8 of the faults on the screen are fault checks which are created at the time the vehicle is the first programmed.

Any fault after that might be relevant. To check new faults you need to press the upper button [↑] twice and the fault will appear (6th Screen).

6th Screen



It will give you the date and time the fault first appeared and the explanation what the fault means.

Note:

You will see a sequence fault if not started in neutral this code will clear as soon as you put the car in neutral.

The vehicle will possibly give you a cut back code. When the vehicle gets low on power it will automatically cut back, this is a safety precaution to protect the motor and controller.

In many cases the fault is just a warning.

For example:
Thermal cut back just means the motor is too hot and will reduce the power to protect the motor.

Push the center arrow button [↵] once, this will get you back to main screen

Hazard Warning Flashers

The Hazard Warning Flasher Switch activates both Turn Signals to provide "***Hazard Warning***" by flashing both Right and Left as well as Front and Rear Turn Signals at the same time.

The "*Hazard*" function is activated by Pull Switch located on Left side of steering column below Steering Wheel. And immediately below the Turn Signal Lever.

It is a 2 position switch.

OFF - When the Pull Switch is released (pushed INWARD)
ON - When the Pull Switch is pulled out, the Turn Signal lights are activated.

NOTE:
The Hazard function can be canceled **ONLY** by moving the "***Turn Signal Lever***" from the the horizontal "**OFF**" position to either "UP" (*Right Turn*) or "DOWN" (*Left Turn*) position!

Pull the Hazard Switch in direction indicated by **arrow** above, to activate.

Horn Button

- The Horn Button is located to the Left of the Brake Pedal (STOP/PARK) and is operated by the Left foot if audio warning is required during vehicle operation (see above).

The switch is labeled "**HORN**".

It is also identified by SAE/ISO "Horn" icon.

It is a momentary switch; the Horn will sound only while the switch is being depressed.

Locking Glove Boxes

The **T-SPORT® NEV** is equipped with two locking glove boxes on the dashboard. Both Locking Glove Boxes use the same key, which however is different from the "*Key Switch*". You can safely lock your valuables in the glove boxes when you Valet park your vehicle.

Left Glove box

Right Glove box

Accessory Outlet

The accessory outlet is located on the dash at the center.

This outlet will accept a standard automotive 12-Volt accessory outlet and is only intended for moderately powered accessories, such as a cellular phone, Lap top computer, etc.

It is not intended to operate large current items, such as cigarette lighters.

To use the accessory outlet remove the plastic safety cover. (shown below)

WARNING!

Damage to electrical components may occur from improper use.

- Do not plug in devices requiring power exceeding 25 watts.

Damage to the vehicle electrical system may occur or an accessory fuse may blow.

- The fuse for the power outlet plug is located in the fuse block.

Always use fuses with the same type and rating.

- Power outlets are designed for accessory plugs only. Do not hang any type of accessory or accessory bracket from the plug.

Cup Holders

The upper center dash also contains two cup holders.

CAUTION!
Liquids can damage electrical components and the circuit board. Handle all liquids with care. Do not spray water directly into the upper or lower dash.

Safety Belts

Your **T-SPORT® NEV** is equipped with "*Safety Belts*" for both driver and all passengers.

Research has shown that safety belts save lives. Safety belts can reduce the seriousness of injuries in a single vehicle accident. Some of the worst injuries happen when people are thrown from the vehicle. Safety belts provide protection, and they reduce the risk of injury caused by striking the inside of the vehicle. Everyone needs to buckle up all the time, even for short trips.

WARNING!

- Wearing a safety belt incorrectly is dangerous. Safety belts are designed to go around the large bones of your body. These are the strongest parts of your body and can take the forces of a collision best.
- Wearing your safety belt incorrectly could increase your risk for injury in a collision. You could suffer internal injuries, or even slide out of part of the belt. Use the instructions in this manual to insure you and your passengers are wearing the safety belts properly.

- Two people should never be belted into a single safety belt. People belted together can crash into one another in an accident, causing injury. Never use a lap/shoulder belt for more than one person, no matter the size of the person.

WARNING!

In a collision, you and you passengers can suffer injuries, including fatalities, if you are not properly buckled up. You can strike the interior of your vehicle or other passengers, or you can be thrown out of the vehicle. Always be sure you and others in your vehicle are buckled up properly.

CAUTION!

Maximum occupancy for operation on public roads is limited to two people (including the driver).

Proper Use of Seat Belt

1. Enter the vehicle and sit back.
2. Grasp the safety belt buckle and slide the buckle up the webbing as far as necessary to make the belt go around your lap and across you chest.
3. When the safety belt is long enough to fit, insert the buckle into the latch until you hear a click.
4. To release the belt, push the red button on the latch.

CAUTION!

Make sure the button on the latch faces upward or outward, so that you are able to unbuckle your safety belt quickly.

WARNING!

A frayed or torn belt could rip apart in a collision and leave you with no protection. Inspect the belt system periodically, checking for cuts, frays, or loose parts. Damaged parts must be replaced immediately. Do not modify or disassemble the system. Seat belt assemblies must be replaced after a collision if they have been damaged (bent buckle, torn webbing, etc.).

WARNING!

- A belt that is buckled into the wrong latch will not function or protect you properly. The lap portion of the safety belt could ride too high on your body, possibly causing internal injuries. Always buckle your safety belt into the latch nearest you.
- A safety belt that is too loose will not function properly. In a sudden stop, you could jerk too far forward, increasing the possibility of injury. Wear your safety belt snugly.

SEAT BELTS AND PREGNANT WOMEN

We recommend that pregnant women use seat belts throughout their pregnancy. Keeping the mother safe is the best way to keep the baby safe.

Pregnant women should wear the lap part of the belt across the thighs and as snug across the hips as possible. Keep the belt low so that it does not come across the abdomen. That way the strong bones of the hips will take the force if there is a collision.

SEAT BELT EXTENDER

If a seat belt is too short, even when fully extended, your dealer can provide you with a seat belt extender. This extender should be used only if the existing belt is not long enough. When it is not required, remove the extender and store it.

WARNING!

Using a seat belt extender when not needed can increase the risk of injury in a collision. Only use when the seat belt is not long enough when it is worn low and snug, and in the recommended seating positions. Remove and stow the seat belt extender when not needed.

Child Restraint

Everyone in your vehicle needs to be buckled up at all times - babies and children, too. Every state in the United States and all Canadian provinces require that small children ride in proper restraint systems. This is the law, and you can be prosecuted for ignoring it.

Children 12 years and under should ride properly buckled up in a rear seat, if available. According to crash statistics, children are safer when properly restrained in the rear seats, rather than in the front.

There are different size and types of restraints for children from newborn size to the child almost large enough for an adult safety belt. Always check the child seat owner's manual to ensure you have the correct seat for your child. Use the restraint that is correct for your child.

WARNING!

In a collision, an unrestrained child, even a tiny baby, can become a missle inside the vehicle. The force required to hold an infant could become so great that you could not hold the child, no matter how strong you are. The child and others could be badly injured. Any child riding in your vehicle should be in a proper restraint for the child's size.

Infants and Child Restraints

Safety experts recommend that children ride rearward-facing in the vehicle until they are at least one year old and weigh at least 20 lbs (9 kg).

Two types of child restraints can be used rearward-facing: infant carriers and "convertible" child seats.

The infant carrier is only used rearward-facing in the vehicle. It is recommended for children who weigh up to about 20 lbs (9 kg).

"Convertible" child seats often have a higher weight limit in the rearward-facing direction than infant carriers do, so they can be used rearward-facing by children who weigh more than 20 lbs (9 kg) but are less than one year old.

Both types of child restraints are held in the vehicle by the lap/shoulder belt.

This vehicle is not equipped with a "latch" child restraint anchorage system.

The lap belt must be used to secure both types of child restraints into the vehicle.

WARNING!

Improper installation can lead to failure of an infant or child restraint.
It could become loose in a collision.
The child could be badly injured or killed.
Follow the restraint manufacturer's directions exactly when installing an infant or child restraint.

Other children and child restraints

Children who weigh more than 20 lbs (9 kg) and who are older than one year can ride forward-facing in the vehicle.

Forward-facing child seats and convertible child seats used in the forward-facing direction are for children who weigh 20 to 40 lbs (9 to 18 kg), and who are older than one year. These child seats are also held in the vehicle by the lap belt.

The belt-positioning booster seat is for children weighing more than 40 lbs (18 kg), but who are still too small to fit the vehicle's seat belts properly. If the child cannot sit with knees bent over the vehicle's seat cushion while the child's back is against the seat back, they should use a belt-positioning booster seat.

The child and belt-positioning booster seat are held in the vehicle by the lap belt.

Children too large for booster seats

Children who are large enough to wear the lap belt comfortably, and whose legs are long enough to bend over the front of the seat when their back is against the seat back, should use the lap belt.

- Make sure that the child is upright in the seat.
- The lap belt should be low on the hips and as snug as possible.
- Check belt fit periodically. A child's squirming or slouching can move the belt out of position.

Not all child restraint systems will be installed as we have described here. Again, carefully follow the instructions that come with the child restraint system.

Tips for getting the most out of your child restraint

- Before buying any restraint system, make sure that it has a label certifying that it meets all applicable Safety Standards. ACG also recommends that you try a child restraint in the vehicle seats where you will use it before you buy it.

- The restraint must be appropriate for your child's weight and height. Check the label on the restraint for weight and height limits.

- Carefully follow the instructions that come with the restraint. If you install the restraint improperly, it may not work when you need it.

- All passenger seat belts are equipped with cinching latch plates.

- Seat belts are designed to keep the lap portion tight around the child restraint so that it is not necessary to use a locking clip.

- The cinching latch plate will keep the belt tight, however, any seat belt system will loosen with time, so check the belt occasionally and pull it tight if necessary

- Buckle the child into the restraint exactly as the restraint manufacturer's instructions tell you.

- When your child restraint is not in use, secure it in the vehicle with the seat belt or remove it from the vehicle. Do not leave it loose in the vehicle. In a sudden stop or collision, it could strike the occupants and cause serious personal injury.

NOTE:

For additional information refer to www.seatcheck.org
or call 1-866-SEATCHECK..

Transporting Pets

Pets should be restrained in a pet harness, or in a pet carrier that is secured by seat belt.

Optional Accessories

CAUTION!

Use only ACG approved accessories.
Others may cause damage to the vehicle, and will void warranty.

WARNING!

Any modifications or alterations to this vehicle could seriously affect its road worthiness and safety and may lead to an accident resulting in serious injury or death.

Tires & Wheels

Tires

Proper tire inflation pressure is essential to the safe and satisfactory operation of your vehicle.
Tire inflation pressures are provided on your vehicle's "*Tire Information Label*" (See page 46, Figure 1).

Four (4) primary areas are affected by improper tire pressure:

1. Safety

Under-inflation increases tire flexing and can result in tire failure. Over-inflation causes a tire to lose its ability to cushion shock. Objects on the road and potholes could cause tire damage that may result in tire failure. Unequal tire pressure can cause steering problems.

CAUTION!
After inspecting or adjusting the tire pressure always reinstall the valve stem cap. This will prevent moisture and dirt from entering the valve stem, which could damage the valve stem.

2. Range

Improper inflation pressures can cause uneven wear patterns to develop across the tire tread. These abnormal wear patterns will reduce tread life resulting in premature replacement. Under-inflation increases tire rolling-resistance, resulting in lower vehicle range.

3. Ride Comfort and Vehicle Stability

Proper tire inflation contributes to a comfortable ride. Over-inflation produces a jarring and uncomfortable ride. Both under-inflation and over-inflation affect the stability of the vehicle and can produce a feeling of sluggish response or over responsiveness. Replace valve stem caps after tire maintenance to prevent dirt from damaging valve stem or preventing the stem from closing properly.

4. Wear

Any accelerated wear of tires may be an indicator of improper alignment or poor driving habits. If uncertain, consult your ACG service provider.

NOTE:

The vehicle's tire information can be found on the "***Tire Information Label***" (See page 46, Figure 1).

WARNING!

Improperly inflated tires are dangerous and can cause accidents.

- Under inflation increases tire flexing and can result in tire failure.
- Over inflation reduces a tire's ability to cushion shock. Objects on the road and chuck holes can cause damage that can result in tire failure.
- **Unequal tire pressures can cause steering problems. You could lose control of your vehicle.**

WARNING!

- Overinflated or under inflated tires can affect vehicle handling and can fail suddenly, resulting in loss of vehicle control.
- Unequal tire pressures from one side of the vehicle to the other can cause the vehicle to drift to the right or left.

Always drive with each tire properly inflated.

Replacement Tires

The tires on your new vehicle provide a balance of many characteristics.
They should be inspected regularly for wear and correct inflation pressure.
ACG strongly recommends that you use tires equivalent to the originals in quality and performance when replacement is needed. Failure to use equivalent replacement tires may adversely affect the safety, handling, and ride of your vehicle. We recommend that you contact your dealer or **ACG** Customer Service regarding any questions you may have on tire specifications or capability.

WARNING!

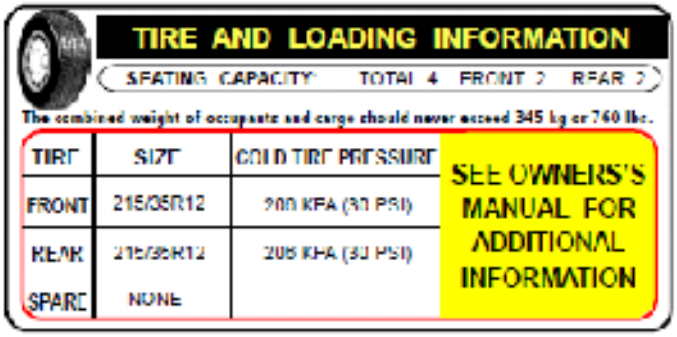
- Do not use a tire size other than that specified on your vehicle's tire label.
- Improperly sized tires can cause vehicle components to wear out prematurely and may change your vehicle's ride, handling, and steering behavior. In addition, it may affect the accuracy of your speedometer/odometer.
- Using tires sized other than specified on your vehicle's tire label could cause you to lose control resulting in serious injury or death.
- Never use a tire smaller than the minimum tire size listed on your vehicle's tire label. Using a smaller tire could result in tire overload and failure.
- Failure to equip your vehicle with tires having adequate speed capability can result in sudden tire failure and loss of vehicle control.
- Overloading your tires is dangerous. Like under inflation, overloading can cause tire failure. Use tires of the recommended load capacity for your vehicle and never overload them.

WARNING!

- Do not use a tire, wheel size or rating other than that specified for your vehicle.
- Some combinations of unapproved tires and wheels may change suspension dimensions and performance characteristics, resulting in changes to steering, handling, and braking of your vehicle. This can cause unpredictable handling and stress to steering and suspension components. You could lose control and have an accident resulting in serious injury or death.
- Use only the tire and wheel sizes with load ratings approved for your vehicle.

NOTE:

The vehicle's tire information can be found on the "*Tire Information Label*" (*Reproduced below*)



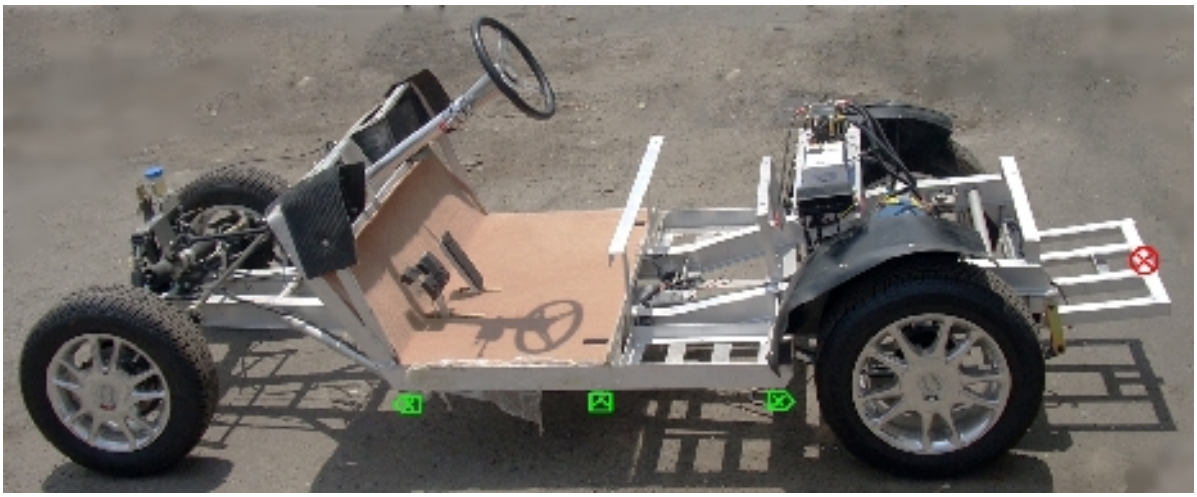
(*The label location on the vehicle is under Certification Label under driver seat*).

Tire Changing & Jacking Points

In the event of a flat tire, you need to observe the following precautions:

- Park the vehicle on a firm level surface; avoiding icy or slippery areas.
- Set the parking brake and block both the front and rear of the tire diagonally opposite the jacking position. For example, if the right front tire is being changed, block the left rear wheel.
- Use a small floor style jack or low profile scissors jack only.
- Jack the vehicle only from the side of the vehicle, on the main frame rail, at the points indicated by ⌫ ⌂ ⌦ where the tub or floor panel support and the main frame rail are welded (See picture below).

Do not use the rear Trailer Hitch Adapter indicated by ⊗ as lifting point !
However it can be used as Tie-Down point during transport see page 82 for details.



The **T-SPORT® NEV** chassis (*body removed*).

CAUTION!
Jacking at any location other than the proper jacking points may cause major vehicle body damage.

WARNING!

Getting under a jacked-up vehicle is dangerous. The vehicle could slip off the jack and fall on you. Never get any part of your body under a vehicle that is on a jack. Never start or run the motor when the vehicle is on a jack. If you need to get under the vehicle, make sure the vehicle is first located on a flat solid surface, and is supported securely by automotive jack stands or, take the vehicle to a service center where a technician can put it on a properly adjusted hoist.

Consumer Information (Tires)

For further information, the '*Consumer Tire Guide*' on passenger tire care, safety and mileage performance is available in the United States by writing to:

Tire Industry Safety Council
Box 1801
Washington, D.C. 20013

For more information on the Tire Industry Safety Council, please consult the following:

• Tire Industry Safety Council — official website for the Tire Industry Safety Council, which is hosted at the Rubber Manufacturers Association website at:

http://www.rma.org/

or

http://www.betiresmart.org/

BE TIRE SMART / PLAY YOUR PART BROCHURE

☐ Download File

Pub #: BTS-01

This 3-panel brochure details how consumers can maintain their tires. It reviews all of the key elements of tire maintenance: Pressure, Alignment, Rotation and Tread.

3-panel brochure is available for Internet Download at:

http://www.rma.org/publications/consumer_tire_information/index.cfm?PublicationID=11173

Brakes

T-SPORT® NEV has Front Disc Brakes which are self adjusting.

Brake Fluid Level

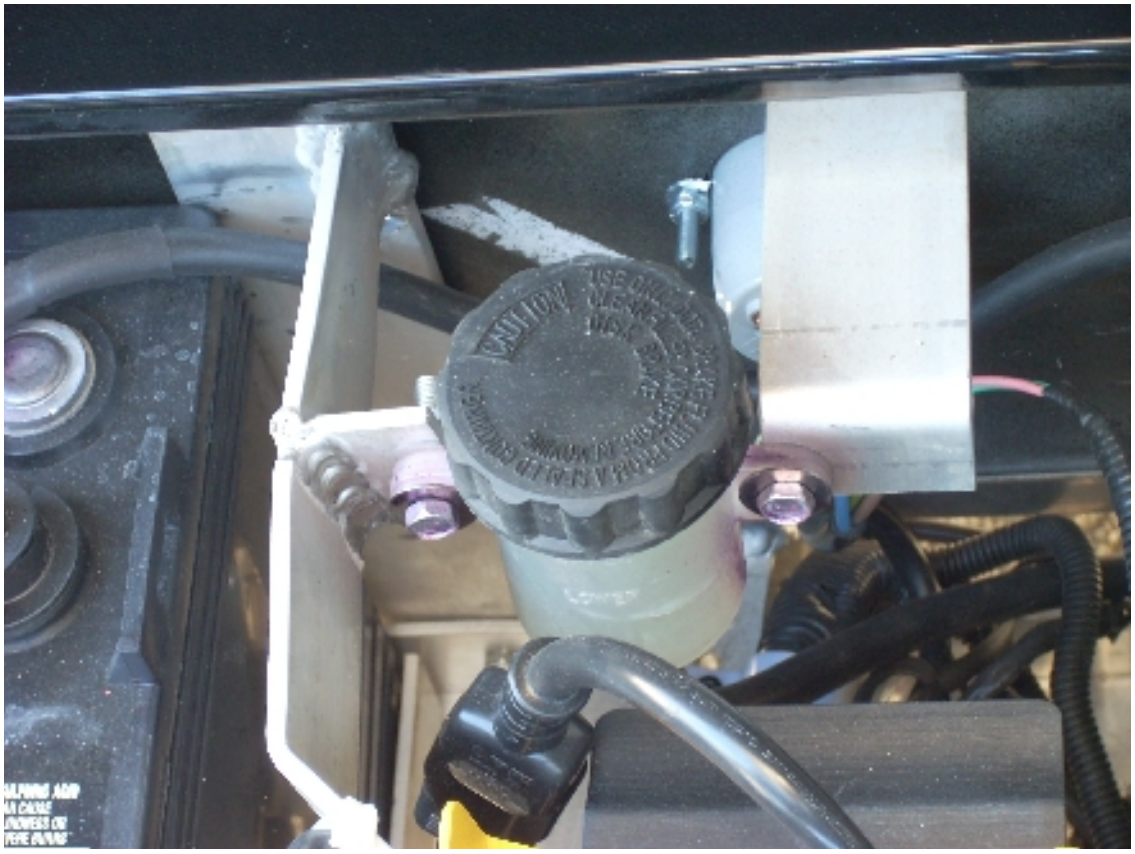
The Brake Fluid Reservoir is located under the Front Bench Seat, at the Front and ahead of the "*Battery Charger*".

The fluid level of your brake system is a very important safety component. It should be checked according to the Monthly Vehicle Maintenance Schedule, on Page 79, by removing the Brake Fluid Reservoir Cap and observing the fluid level.

The maximum fluid level should be at about one inch (25 millimeters) below the reservoir top.

If it is substantially lower, fill it with **DOT 4 Brake Fluid**.

If the Brake Fluid needs to be refilled more frequently than every other month then check the entire Brake System for any leakage and see your dealer for service or call immediately **ACG Customer Service** at **(909) 597-2885**



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CAUTION!

Brake fluid may cause damage to painted and finished surfaces.
Use caution when refilling the brake fluid reservoir.

CAUTION!

Use only **DOT 4** Brake Fluid from a sealed Container.
Clean Filler Cap before removing.

Pre-Operation and Daily Safety Checklist

Every **T-SPORT® NEV** is thoroughly inspected and adjusted at the factory and again re-inspected by your ACG Dealer before it arrives at your door.

However, upon receiving your new **T-SPORT® NEV** you should take time to become familiar with its controls and operation.

The following checklist should be used daily to ensure that the vehicle is in proper working condition and in conjunction with the Periodic Service Schedule.

Any problems should be corrected by an authorized **American Custom Golf Cars, Inc.** distributor/dealer or a fully trained technician.

General:

All parts should be in place and properly installed.
Be sure that any additional attachments are securely mounted prior to the operation of your vehicle.

Tires:

Check for proper tire pressure on your new **T-SPORT® NEV**.
Visually inspect the tires for wear, damage, and proper inflation on a daily basis.

NOTE:

The vehicle's tire pressure information can be found on the "*Tire Information Label*" (*See Page 46*)

Batteries:

Check battery posts. Wires should be tight and free from corrosion.
Charge Batteries fully before first use of the vehicle.

Charger Receptacle:

Visually inspect for cracks, loose connections, and frayed wiring.

Performance Inspection

After you have familiarized yourself with the operation of all the controls of the **T-SPORT® NEV** and have read and understood the driving instructions, take the vehicle for a test drive.
Use the following checklist as a guide to inspect the vehicle and check daily for proper operation.
Any problems or deficiencies you may find should be corrected at once by an authorized **American Custom Golf Cars, Inc.** dealer/distributor or a trained technician.

Check For:

Forward – Neutral - Reverse Switch:
Check for proper operation.

Brakes:
Be sure the brakes function properly. When the brake pedal is depressed under moderate pressure, it should not reach to the floor of the **T-SPORT® NEV**.
When properly adjusted, the vehicle should come to a straight, smooth, stop within 20 feet. If the vehicle swerves, or fails to stop within 20 feet, have the brake system checked and adjusted. The brake adjustment must be maintained so that the brake pedal cannot reach the floor when depressed.

The hydraulic disk brake actuator should be greased monthly to ensure that it is clean and that it can slide smoothly so that the brakes will operate smoothly without binding up.

Park Brake:
When in use, the park brake should lock the wheels and hold the vehicle stationary. It should automatically release when either the accelerator or brake pedal is depressed.

Steering:
The vehicle should not have any play in the steering wheel and it should steer easily without obstruction.

Accelerator:
When the key switch is in the "**ON"** position and the "*Forward–Neutral-Reverse Switch*" is in the "**Forward"** position, as the accelerator pedal is depressed, the motor should start and the vehicle should smoothly come up to full speed.
When the pedal is released it should return itself to the original or "zero" position and the motor should stop.

General:
Listen for any unusual squeaks or rattles. Check the vehicle's ride and performance. Have an **American Custom Golf Cars, Inc.** distributor or dealer or a fully trained technician investigate anything unusual.

Driving Instructions

WARNING!

No person should be allowed to operate the vehicle without being instructed in the proper use and operation of the vehicle's controls. Each first time driver should be accompanied by an experienced driver on a test drive before being allowed to operate the vehicle alone.

1. **Only licensed drivers should be allowed to drive this vehicle.**

2. **If renting or loaning the vehicle, make sure the person driving the vehicle is familiar with all controls and operating procedures before allowing the vehicle to be driven.**

3. **No more than two people should be in the vehicle at any time.**

4. **Be sure all persons can properly operate the vehicle prior to allowing them to drive the vehicle.**

5. **Be sure all passengers are capable of securing themselves with provided "***Seat Belts***" before allowing them to ride in the vehicle.**

6. **When using the NEV at night or in low light situations make sure that the "***Light Switch***" is in the ON or "I" position as this ensures that the headlights and tail lights are on to increase visibility and safety.**

7. **Be sure that the vehicle is at a complete stop before shifting the "***Forward-Neutral-Reverse Switch***". Failure to do so may cause injury to an unsuspecting passenger and/or damage to the vehicle.**

8. **To avoid being struck by the vehicle, do not stand in front or behind the vehicle.**

9. **Operate vehicle only from driver seat.**

10. **To prevent falling from vehicle, remain seated when vehicle is in motion.**
Driver should always drive vehicle with both hands on steering wheel.

11. **To avoid possible serious injury, keep your entire body inside the vehicle**
when it is in motion.

12. **Never leave children unattended in or near the vehicle.**

13. **To prevent the vehicle from overturning, drive slowly straight up and down slopes. Slope exceeding 20% incline should be avoided.**

14. **Avoid sudden stops, sudden starts, and abrupt turns to prevent possible injury to an inattentive passenger or damage to the vehicle.**

15. **Reduce speed for adverse driving conditions such as wet grass or terrain to avoid the possibility of losing control of or overturning the vehicle.**

16. **Obey all the rules governing Low Speed Vehicles (LSV).**

17. **The vehicle should not be driven on roadways where it is prohibited by local laws.**

18. **Do not drive vehicle while under the influence of alcohol, drugs, or medications, prescription or otherwise as they may affect your ability to drive.**

19. **Drive slowly through turns to avoid overturning the vehicle.**

20. **Use brakes to reduce speeds when coasting downhill.**

NOTE:

The **T-SPORT®** **NEV** is not specially equipped for handicapped persons.

Starting the Vehicle

1. Study and understand controls.
2. Make sure everyone is seated with all parts of their body inside the vehicle.
3. Make sure everyone's "*Seat Belts*" are properly fastened.
4. Make sure front wheels are turned in the desired travel direction.
5. Make sure the "*Direction Control Switch*" is in Neutral center position **N**
6. Turn "*Key Switch*" 45 degrees in clockwise direction to the "**ON**" position and make sure nothing is in your path.
7. Select the travel direction using the "*Direction Control Switch*". (**D** or **R**)
8. Slowly depress the "*Accelerator Pedal*" (**GO**) and bring vehicle up to desired speed.
9. The park brake will automatically release when either the accelerator or brake pedal is depressed.

Stopping or slowing the Vehicle

1. Release "*Accelerator Pedal*" (**GO)** and depress the "*Brake Pedal*" (**STOP)**. The vehicle will begin to come to a stop.

WARNING!

Driving through water may affect the brakes.
When stopped on a hill, use the brake pedal to hold your position. Do not use accelerator pedal.

Parking and Leaving the Vehicle

1. After vehicle comes to a complete stop, firmly depress park brake pedal "**PARK**" until it locks into position to prevent the vehicle from rolling.

2. Put the "*Direction Control Switch*" in the "**Neutral**" position **N**

3. Turn the "*Key Switch*" in the counter-clockwise direction to the vertical "**OFF**" position.

4. Remove key to prevent theft and/or unauthorized use of the vehicle.

Batteries

Your **T-SPORT®** is operated as a 48-Volt unit with six (6) 8-Volt batteries. The batteries are specially designed and produced for use in an electric vehicle. If the batteries need to be replaced at any time for any reason, do not use automotive batteries. New batteries usually will not deliver their full capabilities until they have been discharged and recharged 15 to 30 times. To obtain maximum service life on your batteries, be sure to fully charge them prior to using the vehicle for the first time and maintain proper fluid levels in all batteries.

Battery Care

To keep the batteries in top working condition, this maintenance program should be followed on a regular basis:

1. The batteries should always be kept clean and corrosion free. The tops and terminals should be cleaned with a solution of one cup of baking soda per gallon of water. Before rinsing the batteries make sure the caps to the batteries are tight so that the cleaning solution does not enter the battery.
   Please be sure to dispose of any waste water properly.
2. The fluid level in the batteries should be checked on a weekly basis.
   If fluid needs to be added, it should only be done after the batteries have been charged unless the top of the plates are visible prior to charging. Then, you should add just enough water to cover the tops of the plates, charge the batteries and finally check the water level again.
3. After using your vehicle for any period of time, the batteries should be charged.

CAUTION!

If battery wire terminals are damaged or corroded, they should be replaced or cleaned as necessary.
Failure to do so may cause them to overheat during operation.

WARNING! – HIGH VOLTAGE

The battery pack is at a high voltage.
High voltage is always present at the battery terminals.
Never touch the battery terminals when performing battery maintenance procedures.

Battery Inspection & Maintenance

Inspection

There are many tools that may help in properly caring for and maintaining batteries. Below is a list of basic items that ACG recommends for this task:

Recommended Equipment:

- Wrench
- Distilled Water
- Voltmeter
- Hydrometer
- Post Cleaner
- Baking Soda
- Vaseline
- Goggles & Gloves

CAUTION!

Always wear protective clothing, gloves, and goggles when handling batteries, electrolyte, and charging your battery.

Batteries should be carefully inspected on a regular basis in order to detect and correct potential problems before they can do harm. It is a great idea to start this routine when the batteries are first received.

Inspection Guidelines:

1. Examine the outside appearance of the battery.

- Look for cracks in the container.
- The top of the battery, posts, and connections should be clean, free of dirt, fluids, and corrosion. If batteries are dirty, refer to the Cleaning section for the proper cleaning procedure.
- **Repair or replace any damaged batteries.**

2. Any fluids on or around the battery may be an indication that electrolyte is spilling, leaching, or leaking out.

- **Leaking batteries must be repaired or replaced.**

3. Check all battery cables and their connections.

- Look closely for loose or damaged parts.
- Battery cables should be intact; broken or frayed cables can be extremely hazardous.
- **Replace any cable that looks suspicious.**

- **CAUTION!**

- If battery wire terminals are damaged or corroded, they should be replaced or cleaned as necessary.
- Failure to do so may cause them to overheat during operation.

4. Tighten all wiring connections to the proper specification (see below). Make certain there is good contact with the terminals.

Proper Torque Values for Connection Hardware:

Flooded	Side 70-90 in-lbs Wing nut 95-105 in-lbs LPT 95-105 in-lbs Stud 120-180 in-lbs LT 100-120 in-lbs
VRLA	Button 90 to 100 in-lbs LT 100-120 in-lbs

WARNING!

Do not over tighten terminals.
Doing so can result in post breakage, post meltdown, or fire.

CLEANING

Batteries seem to attract dust, dirt, and grime. Keeping them clean will help one spot trouble signs if they appear and avoid problems associated with grime.

1. Check that all vent caps are tightly in place.

2. Clean the battery top with a cloth or brush and a solution of baking soda and water.

- When cleaning, do not allow any cleaning solution, or other foreign matter to get inside the battery.

3. Rinse with water and dry with a clean cloth.

4. Clean battery terminals and the inside of cable clamps using a post and clamp cleaner.
- Clean terminals will have a bright metallic shine.

5. Reconnect the clamps to the terminals and thinly coat them with petroleum jelly (Vaseline) to prevent corrosion.

6. Keep the area around batteries clean and dry.

CAUTION!

Battery acid from cleaning batteries can damage vehicle, driveway or garage floor.

WATERING (FLOODED BATTERIES ONLY)

Flooded batteries need water. More importantly, watering must be done at the right time and in the right amount or else the battery's performance and longevity suffers.

Water should always be added after fully charging the battery.

Prior to charging, there should be enough water to cover the plates.

If the battery has been discharged (partially or fully), the water level should also be above the plates.

Keeping the water at the correct level after a full charge will prevent having to worry about the water level at a different state of charge.

Depending on the local climate, charging methods, application, etc. ACG recommends that batteries be checked once a month until you get a feel for how thirsty your batteries are.

Important things to remember:

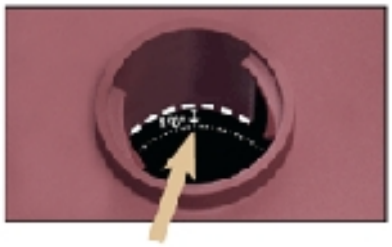
1. Do not let the plates get exposed to air. This will damage (corrode) the plates.
2. Do not fill the water level in the filling well to the cap. This most likely will cause the battery to overflow acid, consequently losing capacity and causing a corrosive mess.
3. Do not use water with a high mineral content. Use only distilled or deionized water only.

CAUTION!

The electrolyte is a solution of acid and water so skin contact should be avoided.

Step by step watering procedure:

1. Open the vent caps and look inside the fill wells.
2. Check electrolyte level; the minimum level is at the top of the plates.
3. If necessary add just enough water to cover the plates at this time. Add water, never acid, to cells (distilled water recommended)
4. Put batteries on a complete charge before adding any additional water (refer to the Charging section).
5. Once charging is completed, open the vent caps and look inside the fill wells.
6. Add water until the electrolyte level is 1/8" below the bottom of the fill well.



7. A piece of rubber can be used safely as a dipstick to help determine this level.
8. Clean, replace, and tighten all vent caps.

WARNING!
Never add acid to a battery.

Charging Batteries

CAUTION!

Be sure that the "Key Switch" is in the "OFF" position prior to charging.

1. Your vehicle is equipped with an on board charger. To begin charging the batteries, insert a UL approved 3 prong extension cord into any household **110-Volt AC 15-Amp** outlet and plug the other end into the charging cord receptacle located at center below the Front Seats.
   (Refer to "***Charging Procedures"*** section for further detailed information regarding the operation of the charger.)

2. Your charger has an on-board computer that is actuated when the charger is plugged in. The charger will turn on automatically and when the optimum amount of energy to charge your batteries has been delivered the charger will turn itself off. As long as the charger is left plugged in until it turns itself off, over and under charging will be avoided.

NOTE:

The first time your batteries are charged, the approximate time of charge will be 10-15 hours. The Charger features a microprocessor controller that reads the battery banks so that it knows what the optimum capacities of each battery are. After the first charge, the average charging time is 7- 8 hours.

3. Batteries should be charged even if they have only been used for a short period of time. The charger will turn on and off automatically when the batteries are fully charged.

CAUTION!

Never charge batteries if plates are exposed above water level.

CAUTION!

Batteries can be permanently damaged (and the battery warranty voided) if allowed to remain 30 days or more with low charge.

CAUTION!

Fully charge batteries before storing.
• In hot climates, battery self-discharge will increase.
• In cold climates, batteries could freeze if not properly charged.
If the vehicle will not be used for 10 or more days, leave the car plugged in.

Battery Replacement

CAUTION!

If the batteries are replaced, make sure they are the exact type and make originally supplied with the vehicle. Failure to follow this caution can result in damage to the vehicle's electrical system.

CAUTION!

Each vehicle is programmed at the factory for a particular battery type. Switching battery types can only be done by **ACG** certified technician.

WARNING!

Improper handling of high voltage wiring, batteries, or control systems could result in serious or fatal injury by electric shock.
Only qualified technicians should repair or access high voltage wiring, battery packs, and associated systems.

Battery Cable Replacement

CAUTION!

It is essential, when replacing the cables on the batteries that the positive cable is attached to the positive post (**+**) and the negative cable is attached to the negative post (**-**). Battery posts are identified on the battery case as **positive** (**+**) and **negative** (**-**).
Cable clamps should be tight on the terminal posts and free of corrosion.

Battery Disposal

Lead-acid batteries are recyclable. Return whole scrap batteries to distributor, manufacturer or lead smelter for recycling. For neutralized spills, place residue in acid-resistant containers with absorbent material, sand or earth and dispose of in accordance with local, state and federal regulations for acid and lead compounds.

Contact local and/or state environmental officials regarding disposal information.

You can also contact **ACG Customer Service** at **(909) 597-2885** for information.

Additional Battery Service Warnings & Cautions

WARNING!

- Always wear safety glasses or approved eye protection when servicing the vehicle.
- Wear a full-face shield and gloves when working with or around batteries and electrical connectors.
- Always use insulated tools when working with or near batteries.

WARNING!

Battery fluid is a corrosive acid solution and can burn or blind you.

- Do not allow battery fluid to contact eyes, skin or clothing. If acid splashes in eyes or on the skin, flush the area immediately with large quantities of water.
- Battery gas is flammable and explosive. Keep flame or sparks away from the battery or any other booster source.
- Do not allow battery cable clamps to touch each other.
- Battery posts, terminals and related accessories contain lead and lead compounds. Wash your hands after handling.

CAUTION!

Battery acid from cleaning batteries can damage vehicle, driveway or garage floor.

WARNING!

The "*Key Switch*" will disable the vehicle by disconnecting the battery pack from the motor. It does not disable the battery pack.

- HIGH VOLTAGE will be present at the battery terminals.
- **HIGH BATTERY VOLTAGE IS ALWAYS PRESENT.**
- **DO NOT TOUCH THE BATTERY TERMINALS.**

Charging Procedures

GENERAL WARNINGS

This "***Charging Procedures***" section should be read completely before attempting to charge or service the vehicle. Failure to follow the instructions in this manual could result in property damage, severe personal injury, or death.

1.) When charging the vehicle, be sure that the "***Key Switch***" is in the "**OFF**" position.

- **a)** Turn the "***Key Switch***" counter-clockwise to "**OFF**" position (vertical).
- **b) Remove the key.**

If the key is left in the "**ON**" position, it may damage the charger or the vehicle.

2.) Fully engage parking brake.

Your vehicle is equipped with an on-board UL- listed charger. When charging your vehicle, please be sure to use a proper, grounded cord to provide power to the charger. (*see Table **T**, Page 68 for details*)

3.) Please be sure to raise the Front Seat of the vehicle to allow ventilation of the charger so that it does not overheat.

Please refer to the separate sections in this "Owner's *Manual*" for further detailed information about your vehicle.

VEHICLE CHARGING

Follow the recommended "*step-by-step*" procedure below to re-charge the vehicle.

MAIN KEY SWITCH

Turn the key switch located to the right of the Steering Column counter-clockwise to the "OFF" position (vertical).
(As Shown in Picture below)

The "***Key Switch***" is mounted on the dash to the right of the steering column.
It has two positions:

1. **OFF position**- "**OFF"** There is no power to vehicle.
(*Key is Vertical as shown above*)

2. ON position- vehicle is "**ON"** and can be driven.
(*Key is turned clockwise 45 degrees*)

WARNING!

The Vehicle Power must be turned "**OFF**" before and during the Charging Cycle. Failure to do so may cause Vehicle damage.

PARKING BRAKE

Fully apply the parking brake by depressing the portion of the Brake Pedal (STOP) that is labeled "PARK".

Verify that the Brake Pedal is in locked (**PARK**) position and the vehicle is stationary.

WARNING!

The "*Park Brake*" will release automatically when either the "*Accelerator Pedal*" or "*Brake Pedal*" is depressed. The park brake has multiple locking positions and should be firmly pressed and locked to prevent the vehicle from rolling.

Direction Control Switch

The "***Direction Control Switch***" is a 3 position "rocker" switch that is located on the vehicle dash panel to the right of the vehicle center-line and to the right of the "***Lights Switch***". The switch is labeled "**Direction**".

There are three (3) distinct positions: **D**, **N** and **R** and so indicated on label to the Right of the switch.

Switch the "***Direction Control Switch***" to the central "***Neutral***" position **N**.

(*Direction Switch shown in **"Neutral"** position*)

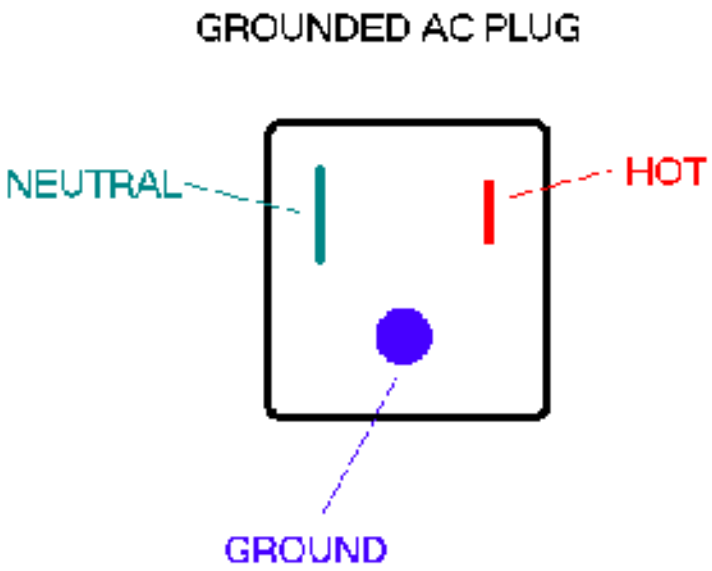
AC Cord

4. Plug the AC Extension Cord into the vehicle charging inlet socket located at the center of the vehicle under the Front seats.

CAUTION:

AC Extension Cord must be of suitable length and proper AWG.
*(See **Table T** on **Page 68** for proper AWG wire size)*

Plug the other end of the AC Extension Cord into 120V AC 3-conductor (Grounded) 120V AC household socket that is fused at a minimum of 15 Amp; 20 Amp circuit is preferable if available. *(or optionally see item "**b**" on next page)*



5. Plug the other end of the extension cord into front of the Kill**-A-Watt Meter**

6. Plug the Kill**-A-Watt Meter** into 120V AC household socket that is fused at a minimum of 15 Amp; 20 Amp circuit is preferable if available.

7. **AVOID** connecting any other device or appliance into the same 15A/20A circuit or the circuit may become overloaded, which will result in tripping of the circuit breaker.

Kill**-A-Watt Meter** – if you use this optional device to monitor charging refer to Page 11 for operating instructions.

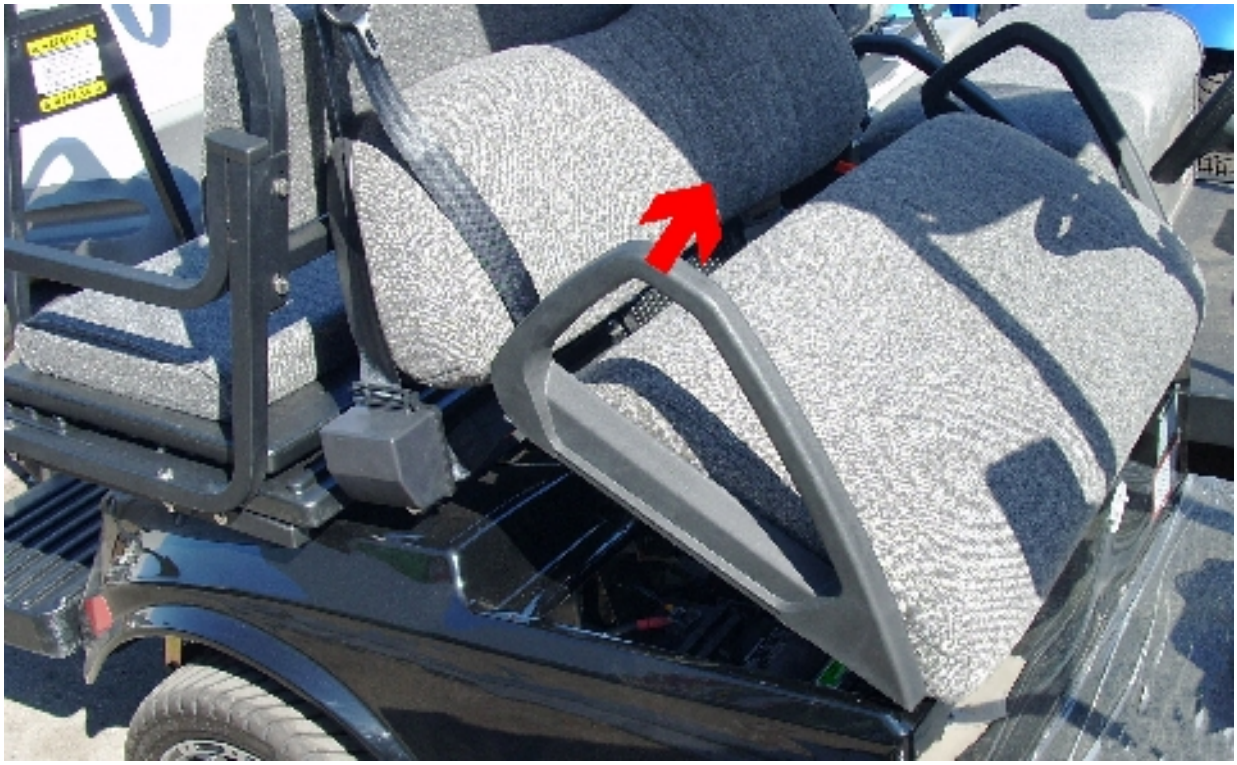
Table T **(AWG extension cable selection)**

Extension Cable Length	Minimum AWG rating (Wire Size)
100 Feet	10 - AWG
50 Feet	12 - AWG
25 Feet	14 - AWG
12 Feet	14 - AWG
6 Feet	16 - AWG
3 Feet	16 - AWG

48 V SYSTEM CHARGER (TRACTION Batteries)

a.) Lift the Front Bench seat by grabbing either Right or Left handlebar at the top as shown below and indicated by ↗ .

b.) The Seat will rotate on the hinge that is installed at the Front of the seat cushion.



c.) **Traction Batteries, Brake Fluid Reservoir and the On-board Charger are located under the seat.** *(as shown in photo on next page)*

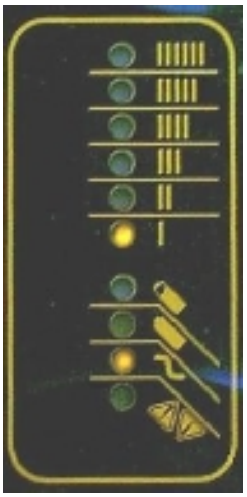
Check the Charger LED display

a.) verify that the charger ON telltale LED (~) on the Charger is lighted.

- Condition YELLOW = ON

b.) verify that <u>one</u> of the charger charge rate telltale LEDs (I – IIIIII) on the Charger is lighted

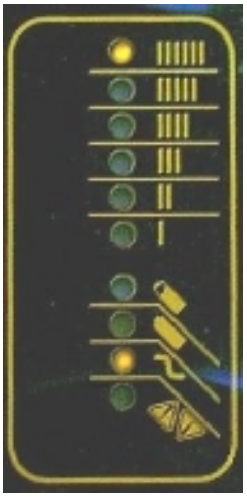
- Condition YELLOW = ON = OK/Charging
- Condition YELLOW = FLASHING = OK/Charging at reduced rate



Charger ON
(***Start of Charge***)

NOTE:

If the Traction Battery is fully depleted the 48 V SYSTEM CHARGER will remain in the Minimum Charge rate mode (Yellow LED I Lighted) for several minutes, if the Traction Battery is not fully depleted, the Charger will automatically switch to the Maximum Charge Rate Mode (Yellow LED IIIIII lighted) in just few seconds.



Charger ON
(***Max rate of Charge***)

As charging progresses the Charge Algorithm reduces the charge rate either due to state of battery charge or due to excessive internal charger temperature.

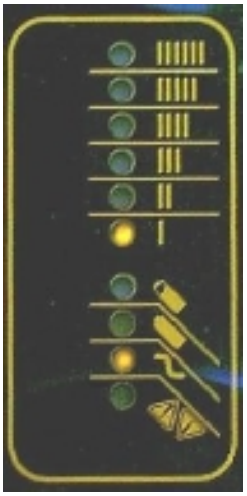
If the charging rate is reduced due to state of battery charge, one of the Yellow LEDs in the upper Six LED Ammeter section will be ON.

The Yellow LED with SIX bars (**IIIIII**) indicates ***Maximum Rate of Charge*** – Charger power input of about 10 to 11 Amperes @ 120 V AC.

The Yellow LED with ONE bar (**I**) indicates ***Minimum Rate of Charge*** – Charger power input of about 1 to 2 Amperes @ 120 V AC.

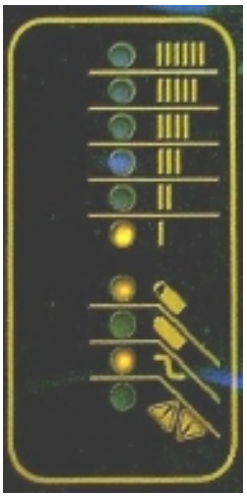
If the charge rate is reduced due to high internal charger temperature the appropriate Ammeter LED will be Flashing.

When any of the Ammeter Yellow LEDs Flashes, the Total Charging Time will be increased!



Charger ON
(***Min rate of Charge***)

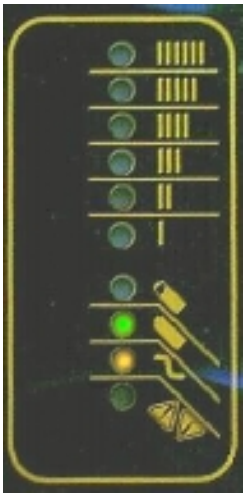
When the "***80% state of Charge***" is reached the Yellow LED indicating 80% charge will be lighted.
Bulk charge phase is complete and the charger is now in Absorption charge phase.



Charger ON
(*Min rate of Charge*)
(***80% state of Charge***)

When <u>Absorption charge phase</u> is completed and the charger now enters the <u>Finish charge phase</u> Green LED indicating "*End of Charge*" charge will be Flashing.

When the "***100% state of Charge***" is reached the Green LED indicating "***End of Charge***" charge will be lighted continuously.



Charger ON / Stand-by
(***End of Charge***)
(*Maintenance Mode*)
When the "***End of Charge***" condition is reached the Charger will automatically switch to "***Maintenance Mode***".
Charger will Auto-restart if 30 days elapse or if Traction Battery Voltage drops to below 50.4 Volts. *(Voltage less than 2.1V per battery cell)*

VEHICLE CHARGING (*End of Charge*)

Follow the recommended step-by-step procedure after vehicle was re-charged.

4. **48 V SYSTEM CHARGER (TRACTION Batteries) -**
   a.) verify that the charger ON telltale LED (~) on the Charger is lighted.
   ■ Condition YELLOW = ON
   b.) verify that end of the charge telltale LED on the Charger is lighted.
   ■ Condition GREEN = FULLY CHARGED

5. Kill**-A-Watt Meter –** if you use this optional device to monitor charging refer to Page **14** for operating instructions.

   Record the Accumulated data: "*Total Charging Time*" and "*Total kWh*"

6. Extension Cord – Unplug the 120V AC extension power cord from vehicle charging inlet socket.

7. Extension Cord - Unplug the extension power cord from the household power socket and stove it properly.

P3 - KILL A WATT ™
Operation Manual

1. The LCD shows all meter readings: Volts, Current, Watts, Frequency, Power Factor, and VA. The unit will start to accumulate **kWh** and powered duration time (hours & minutes) after power is applied.

2. Press Volt Key for true RMS Voltage (**Volts**) display.

3. Press Amp Key for true RMS output current (**Amps**) display.

4. The Watt/VA Key is a toggle function key. Press the Watt/VA key once to display **Watt meter**, then press the Watt/VA key again to display **VA meter**. The LCD will display Watts as the active power, where VA is the apparent Power.
(VA = Vrms * Arms)

5. The HZ/PF is a toggle function key. Press the HZ/PF key once to display the frequency (**Hertz**), then press key again to display the **Power Factor**. HZ is the Frequency of output Voltage, where PF is the Power Factor (PF = W / Vrms Arms).

6. The KWH/Hour is a toggle function key. Press the KWH/Hour key once to show the cumulative energy consumption since power was applied to the unit (**kWh**). Then press key to display the cumulative time since power was applied to the unit.

7. Consumption will be displayed in Kilowatt-Hours (from 0.01 KWH to 9999 KWH). Time will initially be displayed as Hours:Minutes (from 00:00) and switch to Hours (to 9999). Counters will recycle to zero when they reach their maximum.

8. To reset all counters to zero, remove power from unit momentarily for about 15 seconds.

WARNING!

Do not exceed maximum ratings as detailed on label.

Button 1 = Volt
Button 2 = Amp
Button 3 = Watt / VA (toggle**)**
Button 4 = Hz / PF (toggle**)**
Button 5 = kWh / TIME (toggle**)**

DAILY TASKS

1. Charge Batteries fully before first use of vehicle.
2. Check battery terminals for tight connections.
3. Visually inspect the tires for wear, damage, and proper inflation.
4. Check for proper operation of parking brake.
5. Check seat belts for proper operation.

MONTHLY TASKS

1. Check all six (8 Volt) Flooded batteries for proper water level. Use only Distilled Water for addition.
   (Not necessary if vehicle is equipped with Sealed or maintenance free Gel batteries).

2. Check battery terminals for tight connections.

3. Check tires for correct air pressure and wear.

4. Check for proper operation of parking brake.

5. Check brake fluid reservoir for proper brake fluid level.

6. Check brake lines for leaks.

7. Grease the hydraulic disk brake actuator, and check for proper operation of service brake.

8. Check all wheel bearings for looseness or free-play.

Cleaning

CARE AND CLEANING

Cleaning the Windshield

Please be extremely careful when cleaning the Windshield on your **T-SPORT® NEV** as it is made from safety glass.

ACG recommends using *Windshield Washer Fluid to* remove normal dust and dirt. A liquid household glass cleaner can also be used.

Do not use abrasive cleaners on the windshield, as they will cause scratches.

CAUTION!
Be very careful when cleaning the glazing as it can be scratched or damaged. Do not use a cleaner with an abrasive, a combination cleaner and wax or any solvent that contains ethyl or methyl alcohol. Do not use products containing ammonia, soaps, or abrasives. Never use gasoline or any cleaning solvent. These products scratch or destroy the surface of the windows. To remove oil, grease or road tar use isopropyl alcohol and then wash the windows with water. Dry gently with a soft cloth or chamois.

Cleaning the Exterior

The best way to preserve your vehicle's finish is to wash the vehicle regularly. Mild liquid detergents (no strong soaps or chemical detergents), can be used. Rinse promptly after cleaning. Dry the finish with a soft, clean chamois or towel to avoid surface scratches and water spotting.

NOTE:
To avoid spotting, do not wash your vehicle in direct sunlight.

Cleaning the Seats

To clean the seats of your **T-SPORT® NEV**, use water or mild liquid detergent. Rubbing seats with warm water and a clean, damp cloth will also remove dirt. Substances such as tar, asphalt, and other soils will stain if not removed quickly. Use a clean cloth and solvent type vinyl cleaner and then wash the area thoroughly with a damp cloth and mild liquid detergent. Finish by rinsing with cool water.
Dry with a soft, clean chamois or towel to avoid surface scratches or water spotting.

Cleaning the Interior

Use mild liquid detergent and warm water to clean the interior. Wipe using a cloth dampened with warm or cool water or remove detergent or deposits.

CAUTION!

Do not spray the interior of your vehicle. Water contact with the dash panel, instrument panel or switches could damage the electrical system.

WARNING!

Do not use volatile solvents for cleaning purposes. Many are potentially flammable, and if used in closed areas they may cause respiratory harm.

Protection From the Elements

Covering your vehicle is optional; however, prolonged exposure to UV light may deteriorate the exterior and interior finish. It is recommended to protect the vehicle whenever possible and preferably to store it indoors during extended non-use periods. ACG *Custom Vehicle Cover* is available at ACG dealerships.

Transport or Towing

Transporting Your Vehicle

The best way to transport your vehicle is in an enclosed trailer.
If it is necessary to transport your vehicle on an open trailer, follow these guidelines:

1. Never transport your vehicle while the vehicle is facing rearward on the trailer.
2. With the vehicle facing forward, pull the trailer at speeds of 55 MPH or less.
3. Secure any items that could be affected by airflow through the vehicle.
4. **Do not secure across any plastic body or floor panel component of the vehicle.**
   Use Tie-Down points on the frame identified with an "**X**" as shown on page 47.

NOTE:

ACG is not responsible for damage incurred or lost items due to vehicle towing.

CAUTION!
TOWING THE VEHICLE IS NOT RECOMMENDED. This vehicle is not designed for dolly towing. Any vehicle failures resulting from dolly towing will not be covered under vehicle warranty.

Consumer Information

§575.6 Consumer Information Regulations; Requirements as per 49 CFR Part 575.6

Reporting Safety Defects

The following statement must appear in the owner's manual or if there is no owner's manual, on a one-page document. The page on which the statement appears must be listed in the TABLE OF CONTENTS of the owner's manual under "Reporting Safety Defects."

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying **American Custom Golf Cars, Inc.**

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign.

However, NHTSA cannot become involved in individual problems between you, your dealer, or **American Custom Golf Cars, Inc.**

To contact NHTSA:
You may call the Vehicle Safety Hotline:
toll-free at 1-888-327-4236 (TTY: 1-800-424-9153);
go to http://nhtsa.safercar.gov;
or write to:
Administrator, NHTSA,
1200 New Jersey Avenue SE,
Washington, DC 20590.

You can also obtain other information about motor vehicle safety from http://www.safercar.gov

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Specifications

Overall Length	**101** Inches (*with Back Step*)
Overall Width	**42 ½** Inches
Height to top of Windshield	**71** Inches
Wheelbase	**65 ½** Inches
Ground Clearance	**5** Inches
Weight (standard vehicle no batteries)	**738** lb.
Weight (Curb, with Batteries)	**1,180 lb.**
Weight (GVWR)	**2,000 lb.**
Front Wheels	**12”x7”**
Rear Wheels	**12”x7”**
Front Tire Size	**215/35 R12**
Rear Tire Size	**215/35 R12**
Front Brakes	Hydraulic Disk
Rear Brakes	7” Mechanical Drum Type
Drive Motor	**Direct Drive, 48 Volts, 3-phase AC, 17.5 hp**
Transaxle	**Double Reduction, high speed gears**
Electrical System	**48 volts DC**
Batteries	**Six (6) @ 8V each in series = 48V DC**
Speed Controller	**SEVCON Gen4 @ 450 Amp Continuous**
Steering	Rack and Pinion
Chassis	Aluminum I-Beam
Body	Flex Injection Molded
Body Finish	Automotive Paint
Interior Material	Marine-type Vinyl
Carpet	Marine-type Synthetic
Forward Speed	**>20 MPH and <25 MPH**
Braking Distance (*from 20 mph*)	**< 20 feet**
Standard Seating Capacity	**4**

Manufactured by:

American Custom Golf Cars, Inc. *(ACG)*

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(909) 597-7183 fax

www.acgcars.com