

# OWNER MANUAL / SAFETY MANUAL

FULL SIZE / CREW CAB UTILITY VEHICLES

GAS POWERED AND ELECTRIC POWERED MODELS



THE LATEST VERSIONS OF THE ILLUSTRATED PARTS  
LISTS ARE ONLINE AT [AMERICANLANDMASTER.COM](http://AMERICANLANDMASTER.COM)

This manual applies to the following Full Size / Crew Cab Utility Vehicle brands:

**LANDSTAR™**

**CROSSROAD™**

**Trail Wagon™**

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## YOUR PRODUCT IDENTIFICATION NUMBER (PIN)

**Making sure your PIN is noted correctly greatly reduces any delays in getting help with parts, accessories or any warranty work.**

**MODEL:**

**17 CHARACTER PIN:**

letter / digait / letter   letter/digait   letter/digait   letter   letter/digait   letter   letter   letter   letter   digaits / letters



**THE PIN PLATE IS LOCATED BELOW THE UTV STEERING WHEEL**

**American LandMaster** welcomes you to its growing family of new product owners. This Utility Terrain Vehicle (UTV) has been designed with care and built by skilled workers using quality materials. Proper set-up, maintenance and safe operating practices will help you get years of satisfactory use from this vehicle.

### PLEASE TAKE A FEW MOMENTS TO GET ACQUAINTED WITH YOUR VEHICLE BY READING THIS OWNERS' MANUAL.

- Before operating this vehicle, the owner, and each operator, must understand that this vehicle was not designed or manufactured to meet specifications for use on public roads, streets, highways and thoroughfares.
- The owner, operator(s) and passenger(s) must read and understand all the instructions for proper assembly and safe operation, as well as the instructions concerning the engine and all other portions of the vehicle as described and illustrated in this manual.
- This vehicle is **NOT** to be operated by anyone under 16 years of age.
- This vehicle is **NOT** a toy.
- Be sure to follow the recommended maintenance schedule and service your vehicle accordingly.



### PREVENTATIVE MAINTENANCE IS EXTREMELY IMPORTANT TO THE SAFE OPERATION AND LONGEVITY OF YOUR VEHICLE.

- Inexperienced and first time drivers are urged to seek instruction from a dealer or qualified instructor before and during the initial use of this vehicle. It is also recommended to practice in a large open area to become familiar with the operation of the machine.

### FOR MORE INFORMATION ON AMERICAN LANDMASTER AND OUR FULL PRODUCT OFFERING, VISIT OUR WEBSITE AT [WWW.AMERICANLANDMASTER.COM](http://WWW.AMERICANLANDMASTER.COM).

For a detailed description of warranty coverage for your vehicle, refer to the Warranty section found in this Owners' Manual or go to [www.americanlandmaster.com](http://www.americanlandmaster.com).

For a detailed description of the emissions warranty for your vehicle, refer to the Emissions Warranty section of this Owners' Manual or go to [www.americanlandmaster.com](http://www.americanlandmaster.com).

### CELL PHONE USE

The use of Mobile Communications Equipment has become increasingly important and prevalent in both personal and business affairs. Drivers must not compromise their own, or others safety when using such equipment. American LandMaster recommends against the use of any handheld device while driving this vehicle. We hope you will have a fun, safe experience with our products and thank you again for choosing an American LandMaster Utility Vehicle.

### USING THIS MANUAL

- Prior to any vehicle operation it is absolutely essential that you read and comprehend each section in this manual to develop an understanding of your vehicle and for your safety. After reviewing this manual, store it in a dry and easily accessible place for future reference.
- This manual is designed to help familiarize you with safety, assembly, operation, adjustments, troubleshooting, and maintenance. Read this manual and follow the recommendations to help ensure safe and efficient operation.
- The information contained within this manual was current at the time of printing. Constant improvement in the design and quality of components may result in discrepancies between the actual vehicle and information presented in this manual.
- To view the most up to date manuals or to order a new Operator's or Parts Manual contact your authorized dealer or contact American LandMaster Customer Service at 800-643-7332 or visit us on the web at [www.americanlandmaster.com](http://www.americanlandmaster.com).

This manual has been prepared to instruct you in the safe and responsible operation of your Utility Vehicle. Read and abide by all safety alert information about this vehicle. If you do not understand any part of this manual, contact your local dealer for additional information and clarification. As the operator of this piece of equipment, you are in complete control. Only you can prevent an accident from happening.

### TERMINOLOGY

Right-hand and left-hand as used in this manual are determined by facing the direction the vehicle will travel while in use unless otherwise stated.

### GETTING ACQUAINTED WITH YOUR UTILITY VEHICLE

This vehicle is designed exclusively for off-road use. It is not designed, properly equipped, or licensed to be safely operated on public streets and highways unless equipped with an LSV package, or as directed by local ordinances.

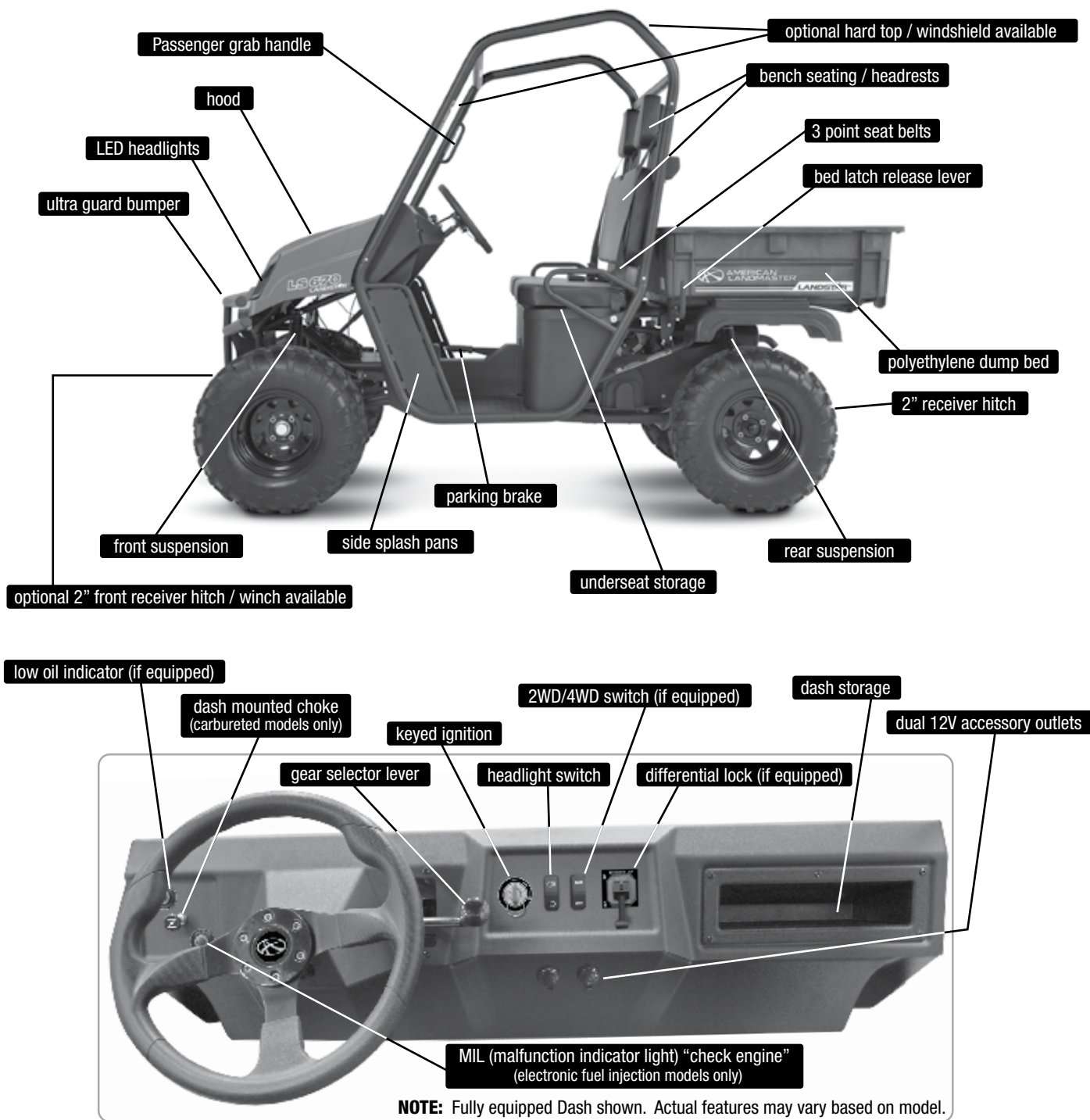
A vehicle configured as a Low Speed Vehicle (LSV) is street legal where allowed when properly licensed and plated. Although street legal, the LSV is not designed for, nor allowed on highways. Refer to your local ordinances regarding the use of Low Speed Vehicles in your area.

Unlike an ATV's one person "straddle saddle" seat, the Utility Terrain Vehicle is equipped with seat belts and a protective body structure. Two passengers can ride comfortably in this vehicle protected from splashing water and mud. The Overhead Brush Bar System mounted to the vehicle's frame provides protection against low hanging limbs and briars. The Overhead Brush Bar System also reduces the likelihood of a properly restrained occupant from being crushed as a result of a vehicle rollover.

The Overhead Brush Bar System also provides mounting for a variety of accessories including windshields, canopy tops and weather enclosures. For a complete listing of available accessories, please contact your local dealer or visit our website at [www.americanlandmaster.com](http://www.americanlandmaster.com).

The cargo bed on your vehicle has been designed to be versatile and durable for a variety of cargo carrying functions. A standard 2" receiver hitch makes towing convenient and easy.

## Features / Locations



**American LandMaster** wants you to be satisfied with your new vehicle. If you do not understand any part of this manual or you're not satisfied with the service received, please take the following actions:

- Discuss the matter with your dealership service manager. Make sure they are aware of any problems so they can assist you.

- If you are still unsatisfied, please call American LandMaster customer service at 800-643-7332 or email us at [feedback@americanlandmaster.com](mailto:feedback@americanlandmaster.com).



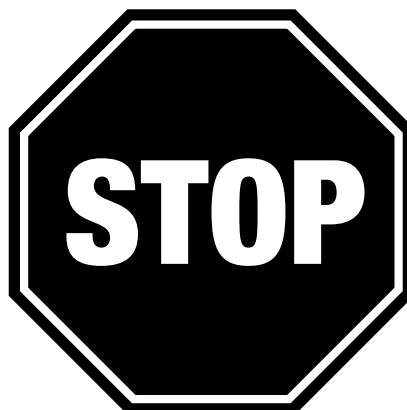
2499 S 600 E, suite 102  
Columbia City, IN 46725

Toll Free 800-643-7332

Fax 800-399-1399

[www.americanlandmaster.com](http://www.americanlandmaster.com)

# section 2 safety



## IMPORTANT SAFETY INFORMATION

The following section has been prepared to instruct you in the safe and responsible operation of your utility vehicle. Read and abide by all safety alert information about this vehicle. If you do not understand any part of this section, contact your local dealer for additional information and clarification. As the operator of this piece of equipment, you are in complete control. Only you can prevent an accident from happening.



### AGE OF OPERATOR:

This vehicle is not to be operated by anyone under 16 years of age.

### ASSUMPTION OF RISK:

The owner or operator assumes all the risks incident to or arising out of the operation of this Utility Vehicle.

## WARNINGS AND CAUTIONS



This is the safety alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury. Read and follow all instructions in this Manual, before attempting to operate this vehicle.



### WARNING

*Indicates a potential hazard that could result in severe personal injury or death*



### CAUTION

*Indicates a potential hazard which may result in personal injury or damage to the machine.*



### NOTE

*will alert you to key information or instructions.*

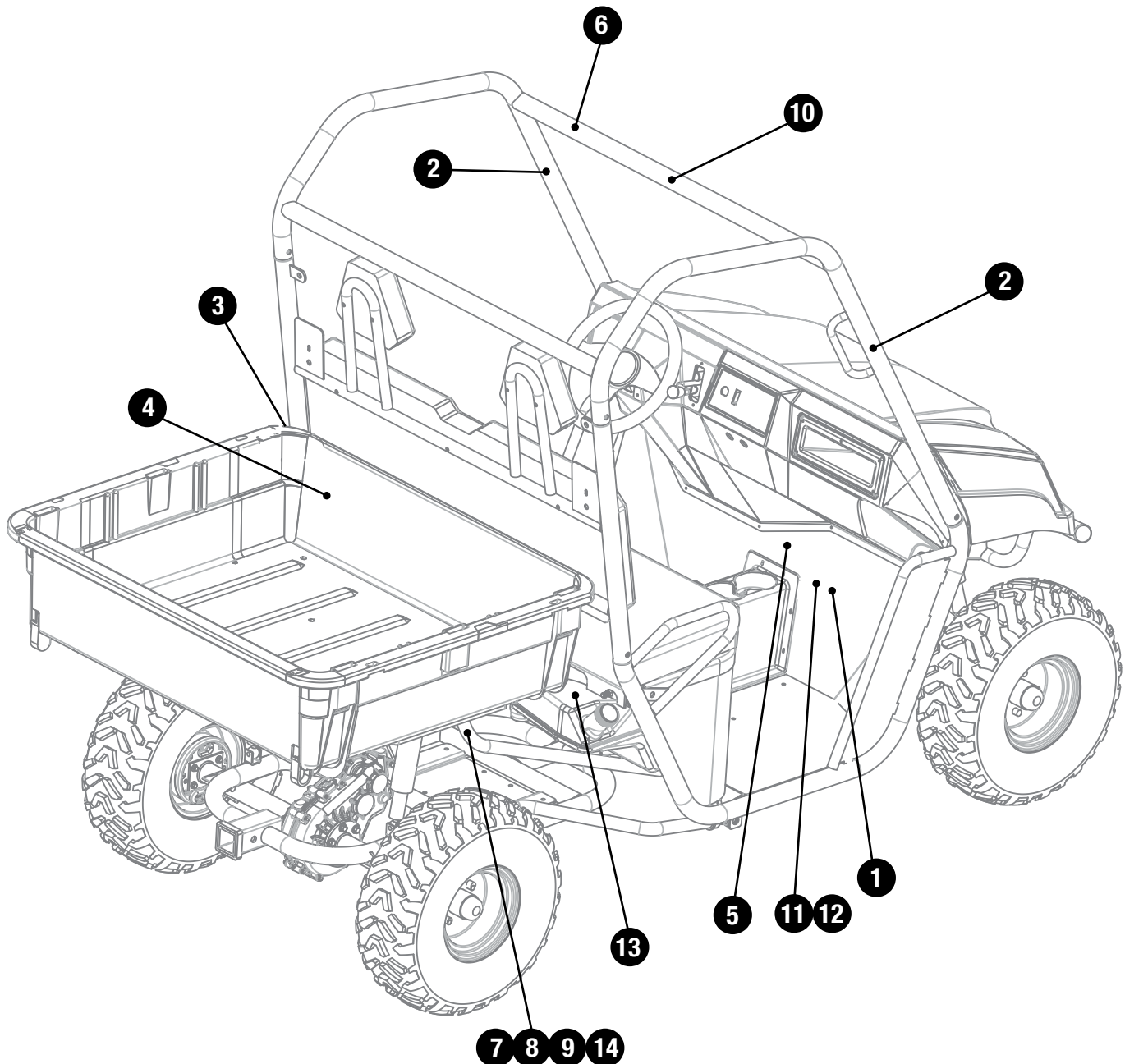
## BEFORE OPERATING THIS VEHICLE

Please take a few moments to get well acquainted with your vehicle by reading this Owners' Manual.

- Before operating this vehicle, the owner, and each operator, must understand that this vehicle is designed to be an off-road vehicle and has not been or manufactured to meet specifications for use on public roads, streets, highways and thoroughfares.
- The owner, operator(s) and passenger(s) must read and understand all the instructions for proper assembly and safe operation, as well as the instructions concerning the engine and all other portions of the vehicle as described and illustrated in this manual.
- This unit is not designed for children and should not be operated by anyone under 16 years of age.
- This vehicle is not a toy.
- Be sure to follow the recommended maintenance schedule and service your vehicle accordingly. Preventative maintenance is extremely important to the safe operation and longevity of your vehicle.
- Inexperienced and first time drivers are urged to seek instruction from a dealer or qualified instructor before and during the initial use of this vehicle. It is also recommended to practice in a large open area to become familiar with the operation of the machine.

## SAFETY LABEL LOCATIONS

**IT IS VERY IMPORTANT TO READ, UNDERSTAND, AND FOLLOW ALL INSTRUCTIONS AND WARNINGS LOCATED ON THE DECALS ON YOUR UTILITY VEHICLE.**



**SEE FOLLOWING PAGES FOR SAFETY LABEL DETAIL**

# IT IS VERY IMPORTANT TO READ, UNDERSTAND, AND FOLLOW ALL INSTRUCTIONS AND WARNINGS LOCATED ON THE DECALS ON YOUR UTILITY VEHICLE.

Label illustrations may not be actual size

1

## ⚠ WARNING

### OBSERVE THE FOLLOWING INSTRUCTIONS

Failure to understand and follow Warnings and Instructions for the safe use and maintenance of this product may result in **Death or Injury!** This information is contained in the Warning Labels, Owner's Manual & Supplements, Safety Video, and Engine Manual supplied with this product. Make sure that you understand and follow all Warnings and understand and follow all Warnings and Instructions in this Instructions in this material.

- Always wear a D.O.T.-approved motorcycle helmet, eye protection, and protective clothing.
- Reduce speed and use caution on slopes and in sharp turns.
- This vehicle is not to be operated by anyone under 16 years of age.
- **Do NOT** operate the vehicle without the brush bars securely in place.
- Keep all covers and shields properly installed.
- Never ride after consuming alcohol, drugs, or other intoxicants.
- Throttle and Brake Controls must work properly and freely before starting the engine.
- Operator must be seated, safety belt must be fastened before operating the vehicle.
- Never operate at speeds too fast for your skills or the conditions. Never attempt jumps or other stunts.
- Check tire pressures before operating. Refer to Owner's Manual for proper operating pressure.
- This vehicle is not street legal and is intended for off-road use only.



If you did not receive any of the material listed above, please call **800-643-7332** and request to have them sent to you at no charge.

2-60057 A

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## ⚠ CAUTION ⚠ PRECAUCION

### SHUT OFF FUEL VALVE

Always shut off fuel valve before transporting this vehicle.

### APAGE LA VÁLVULA DE COMBUSTIBLE

Todo el tiempo apague la válvula de combustible antes de que transporte este vehículo.

2-60057 CS

4

## ⚠ WARNING



### NO RIDERS

All occupants must be inside the vehicle and wearing the proper restraints and safety gear.

## ⚠ ADVERTENCIA

### NO SUBIR

Todos los ocupantes deben estar adentro del vehículo usando equipo de seguridad y restricciones adecuadas.

2-60057 JS

3

## ⚠ WARNING ⚠ ADVERTENCIA

### LATCH DUMP BED

Driving with the cargo bed raised is hazardous. Always lower and latch bed before driving.



### SEGURO DE LA CAJA DE VOLCAR

Manejar con la caja de carga levantada es peligroso. Todo el tiempo manténgala abajo y use el seguro de la caja cuando maneje.

2-60057 IS

1

## ⚠ ADVERTENCIA

### OBSERVE LAS SIGUIENTES INSTRUCCIONES

El hecho de no comprender y seguir las Advertencias e Instrucciones para el uso seguro y el mantenimiento de este producto puede causar **¡MUERTE O LESIÓN!** Esta información esta contenida en las Etiquetas de Advertencia, Manual de Dueño y Suplementos, Video de Seguridad, y el Manual del Motor proveídos con este producto. Asegúrese de comprender y seguir todas las advertencias e instrucciones suministradas.

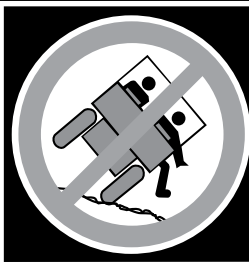
- Siempre lleve puesto un casco de motocicleta aprobado por D.O.T., protección en los ojos, y ropa de protección.
- Reducir la velocidad y tenga cuidado en las pendientes y en curvas cerradas.
- Este vehículo no debe ser operado por ninguna persona menor de 16 años de edad.
- **NO opere** este vehículo sin las barras protectoras aseguradas en su lugar. Mantenga todos las cubiertas y protectores apropiadamente instalados.
- Nunca maneje después de consumir alcohol, drogas, u otros intoxicantes.
- Acelerador, y controles de frenos deben trabajar apropiada y libremente antes de encender el motor.
- El operador debe estar sentado, el cinturón de seguridad antes de operar el vehículo.
- Nunca opera a una. Nunca intente saltos o acrobacias. Sus habilidades o las condiciones.
- Checar inflación de llantas antes de operar. Consulte el Manual de Dueño para la presión adecuada de operación.
- Este vehículo no es legal en la calle y destinados a uso solamente afuera de carretera.



Si Usted no recibió alguno de los materiales mencionados anteriormente, por favor llame al **800-643-7332** y solicite que se le envíen sin cargo.

2-60057 AS

## ⚠ WARNING ⚠ ADVERTENCIA



### VEHICLE MAY ROLL

This vehicle will handle differently from any ordinary passenger car or truck. Sharp turns or abrupt maneuvers at high speeds may cause this vehicle to roll over or go out of control. Read and understand Owner's Manual before operating this vehicle.

2

### EL VEHÍCULO SE PUEDE VOLCAR

Este vehículo se maneja y se manobra diferente de cualquier otro carro o camión común de pasajeros. Curvas cerradas o maniobras bruscas en alta velocidad puede causar una volcadura o pérdida del control. Lea y comprenda el Manual de Dueño antes de operar este vehículo.

2-60057 BS



6

**! WARNING**



**ALWAYS WEAR SEATBELT**

Seatbelt must be properly fastened and adjusted for each occupant prior to operating the vehicle; See Operator's Safety Manual.

**! ADVERTENCIA**

**SIEMPRE USE CINTURON DE SEGURIDAD**

El cinturón de seguridad debe ser apropiadamente atado y ajustado para cada ocupante antes de la operación del vehículo; Ver Manual de Dueño.

2-60057 ES

7

**! WARNING**



**HOT SURFACES**

Surfaces around the engine and exhaust can be extremely hot. Allow surfaces to cool before servicing.

**! ADVERTENCIA**

**SUPERFICIES CALIENTES**

Las superficies alrededor del motor y el escape pueden estar extremadamente calientes. Permita que las superficies se enfríen antes de realizar el mantenimiento.

2-60057 FS

8

**! WARNING**



**EXHAUST GAS HARMFUL**

Engine exhaust from this product contains chemicals, known in certain quantities to cause cancer, birth defects, or other reproductive harm.

**! ADVERTENCIA**

**GASES DE ESCAPE NOCIVOS**

Gases de motor de este producto contienen productos químicos, conocidos que en determinadas cantidades pueden causar cáncer, defectos de nacimiento u otros daños reproductivos.

2-60057 GS

9

**! CAUTION**

**USE ONLY MID-GRADE UNLEADED GASOLINE (87 – 93 OCTANE)**

This engine is designed to run on automotive gasoline. NEVER use E-15 or E-85 fuel (diesel) or blends with an Ethanol content in excess of 10%. Doing so will cause damage to the engine and void the warranty.

**! PRECAUCION**

**USE SOLO GASOLINA DE MEDIO-GRADO SIN PLOMO (OCTANO 87-93)**

Este motor fue diseñado para funcionar con gasolina de automovil con mezclas de etanol permitidos de 0% a 10%.

El intentar utilizar otro tipo del que se requiere, causara daños al motor y no sera valida la garantía del fabricante.

2-60057 HS

10

**! WARNING**

**WEAR A HELMET**

Always wear a helmet when riding this vehicle.

14964

**! ADVERTENCIA**

**USAR UN CASCO**

Siempre use un casco al montar este vehículo.

14964S

11

**! CAUTION**

**DO NOT SHIFT WHILE IN MOTION**

**D** To change gears, stop the vehicle. Shift with the engine at idle.  
**N** Shifting gears with the engine speed above idle or with the vehicle in motion may cause transmission damage.  
**R**

11330-Q

**! PRECAUCION**

**NO CAMBIE DE VELOCIDAD MIENTRAS ESTE EN MOVIMIENTO**

**D** Para cambio de engranes, detenga el vehículo, cambie con el motor desacelerado.  
**N** Cambio de engranes con el motor acelerado por encima de lo normal o con el vehículo en movimiento puede causar daños a la transmisión.  
**R**

11330-Q

12

**! WARNING**

Bring engine to an idle before selecting 4WD mode. Sudden engagement under power may damage drive train. Failure to do so may void warranty.

13

**! WARNING ! ADVERTENCIA**

**TURN OFF ENGINE**

Always turn off engine before refueling. Refuel in a well ventilated area. Keep away from flame or sparks.

**APAGE EL MOTOR**

Todo el tiempo APAGE el motor antes de poner combustibles. Ponga combustible en un área bien ventilada. Aleje de las llamas o chispas.

2-60057 DS

14

**! WARNING**

**ALWAYS USE SHIELDS**

Shields must be installed and properly fastened prior to operating vehicle. See Operator's Safety Manual

**! ADVERTENCIA**

**SIEMPRE USE ESCUDO TERMICO**

Escudo termico deben ser instalados y correctamente sujetos antes de operar el vehículo. Vea el Manual de Seguridad del Operador.

16857

### SAFE OPERATING PROCEDURES

Your Utility Vehicle has been designed with many built-in safety features. However, no one should operate this vehicle before carefully reading this Operator's Manual. Also read all instructions noted on the safety decals.

#### **WARNING**

OPERATION 

- Be familiar with all functions of this vehicle.
- Do not allow anyone to operate this vehicle who has not fully read and comprehended this manual and who has not been properly trained in the safe operation of this vehicle.
- Do not operate a vehicle with damaged or defective parts. A damaged vehicle should be evaluated and repaired by an authorized service center and defective parts replaced before putting vehicle back in to service.
- Operator must always use both hands on the steering wheel.
- No riders allowed except in factory designed and supplied seating.
- Operate this vehicle from the driver's seat only.
- Do not leave this vehicle unattended with engine running.
- Do not dismount a moving vehicle as serious injury or death could occur.
- Always operate vehicle with belt guard installed. Do not leave pulleys and belts exposed.
- NEVER operate vehicle with engine shields or guards removed.
- Do not touch engine, exhaust pipe, shields and/or muffler. Surfaces on or around the engine can be extremely hot.
- Do not touch engine, exhaust pipe and/or muffler. Surfaces on or around the engine can be extremely hot.
- Wear snug-fitting clothing to avoid entanglement with moving parts.
- Long hair, loose clothes, or jewelry can get caught in moving parts below and behind the seat or surrounding environment.
  - a. Remove or tie back anything loose that can reach below and behind the seat before riding.
- Always be aware of and avoid tree limbs and brush that have a potential of hitting and/or poking individuals riding the vehicle. Serious body harm could result.
- Avoid sudden stops, starts, and turns.
- Always operate your vehicle at a safe speed that will allow you to maintain control.
- Always wear seatbelt - seatbelt must be properly fastened and adjusted for each occupant prior to operating this vehicle.
- Do not exceed total payload capacity of this vehicle.

#### **WARNING**

OPERATION 

- Do not pull a trailer or implement exceeding the specified towing capacity or loss of control may result.
- Do not attach an implement, trailer or other device to the hitch that will produce negative tongue weight.
- Follow all towing instructions in this manual when transporting the UTV behind another vehicle.
- Do not use the vehicle as an anchor device.
- Reduce speed when loaded with cargo. Heavy loads take longer to stop.
- Beware, tow ropes, cables and chains can break when pulling another vehicle or object causing serious injury or death to anyone in line with the whipping action created when they break. Never jerk when pulling, always ease into a pull gently. Always stay clear of the tow line. Never be in line with the tow line.
- Reduce speed and payload on hilly, rough, wet, slick or unstable ground.
- Do not exceed the rated capacity of the cargo bed (see specifications).
- Do not mount a receiver hitch type carrier platform to the vehicle.
- Do not load the Overhead Brush Bar System with heavy equipment. Rollover could result from such loading.
- The Overhead Brush Bar System is not certified ROPS (Roll Over Protection System). Always avoid rollovers.
- Do not operate this vehicle on highways, public roads, or where it may be a hazard to faster moving traffic.
- Never attempt wheelies, jumps, or other stunts. Never drive recklessly. Always operate your vehicle at a safe speed that will allow you to maintain control.
- Never use vehicle for racing and never modify the engine to exceed 25 MPH vehicle speed.
- Always make sure the vehicle pathway is clear of all objects when backing up. Know location of personnel around vehicle and especially location of small children. Take extra precautions when rear view is hindered by cargo.
- Always park on level ground, stop engine, set parking brake and remove ignition key before leaving the vehicle. Chock tires if condition warrants.
- Use extreme caution when cresting hills or when visibility is limited. Proceed slowly until you are sure trail conditions immediately ahead are safe.
- Keep front wheels straight when cresting hills or going over bumps.
- Do not stop, start suddenly or over accelerate on hills. Loss of control and rollover could result.



## **WARNING**



- Use extreme caution when descending hills or running on loose slippery surfaces. Towing, braking, and traction are greatly diminished.
- Do not operate vehicle on 15 degree (26% grade) slopes or steeper.
- Avoid changing direction or making sharp steering corrections on slopes or rollover may occur.
- If this vehicle begins to tip when crossing a slope, turn the front wheels downhill to regain stability and control.
- Never allow vehicle to coast or free wheel in neutral or loss of control may result.
- When crossing a slope on soft terrain, turn the front wheels slightly uphill and maintain a constant speed to maintain a straight line of travel.
- When descending hills or slopes apply steady pressure to the foot brake to avoid potential of freewheeling or runaway.
- If your vehicle loses power and stops while climbing a hill, immediately engage the foot brake and back slowly down the hill maintaining a straight downhill line of travel. Do not attempt to turn the vehicle sideways on the hill or a rollover could result.
- When traveling at night always use your headlights and reduce speed according to visibility, trail, and terrain conditions.
- Avoid water crossings when possible and never cross a body of water where depth is unknown. Loss of power will occur if the drive belt becomes submerged or wet. Unnecessary crossing of streams and waterways erodes shore line and damages water-born habitat. If you must cross, do it at a point where banks are not steep and proceed at a slow and steady speed.
- Front bumper and brush guards are not designed as push bars. Do not attempt to push other vehicles or implements or damage may result.
- Do not shift transaxle unless this vehicle is fully stopped and the engine is at idle or damage may occur.
- This vehicle is not designed for use on rental tracks of any kind.
- The safe operation of this vehicle is dependent upon the operator's ability to exercise proper judgment.
  - a. Operator and passenger must not be too small or too large for controlled operation.
  - b. Operator and passenger must be of sufficient age, understanding, mental capacity, and physical capacity to safely operate and ride in the vehicle.
  - c. Vehicle should only be operated after mature, supervised instruction and sufficient practice in an un-congested area.
- NEVER start the engine without checking to see that the throttle control is in idle position.
- ALWAYS use extreme caution when starting the engine.
  - a. Hot engine, muffler, shield, or drive components can burn on contact.
- ALWAYS use extreme caution when starting the engine.

## **WARNING**



- a. Hot engine, muffler, or drive components can burn on contact.
- NEVER operate the machine while under the influence of alcohol, drugs, or medication of any kind.
  - a. Such operation is dangerous to yourself and/or others.
- NEVER use hand held electronic devices while driving this vehicle.
  - a. Driving while distracted can result in loss of vehicle control, accident and injury.
- Wet, slippery, rough, or sloped terrain is potentially dangerous and may result in injury if proper caution is not observed.
  - a. ALWAYS SLOW DOWN
  - b. Operator must use mature judgment, skill, and experience to choose a speed suitable for terrain and riding conditions in protecting operator, passenger, and/or any bystanders.
  - c. Operator must use mature judgment, skill and experience in choosing suitable terrain for individual operational capabilities.
- ALWAYS SLOW DOWN when turning.
  - a. This vehicle is not a passenger car. High-speed turning and failure to operate this vehicle correctly may cause loss of control, vehicle rollover and/or possible death or injury to the vehicle occupant(s).
  - b. Turning on a slope increases the risk of rollover.
  - c. Practice driving in a safe open area to develop a feel for the vehicles performance and handling characteristics, size and weight.
- When turning on pavement, loose gravel, or similar surfaces, there is an increased risk in loss of control. \*\* ALWAYS SLOW DOWN! \*\*
- Operating the vehicle in conditions where water, mud, snow, dirt, sand, or other debris can get into the throttle cable conduit and/or on the throttle mechanism may cause binding of the cable and/or the throttle mechanism.
  - a. This may result in the throttle sticking which can cause the engine to continue to run and result in loss of control.
- STOP the vehicle and back slowly down any hill that the vehicle lacks the power or traction to climb. Do NOT turn across the slope or try to turn around.
  - a. Turning on a slope increases the risk of rollover.
  - b. Control the descent speed with the brake (left foot pedal).
  - c. Re-applying the throttle when facing up a steep hill increases the risk of the front tires leaving the ground and the vehicle over-turning.
- STOP the engine if the machine makes unusual noises or vibrations.
  - a. Check the vehicle for damage.
  - b. Excessive noise or vibration is a sign of loose or worn parts.
  - c. Do not attempt to use the vehicle until it has been serviced to correct the issue.
- Secure all cargo and loads with proper tie-downs.
- Always put the vehicle in neutral and set the parking brake when unattended.
-  • The vehicle is NOT to be operated by anyone under 16 years of age.
-  • Keep hands, feet, and all body parts in the vehicle at all times.

## WARNING

MAINTENANCE



- Never modify any parts on the vehicle without authorization. Unauthorized modifications will void warranty to all parts directly and indirectly affected by the modification.
- Support this vehicle securely before working beneath. Chock the wheels to prevent the vehicle from rolling.
- Assembly, maintenance, and/or repair of this vehicle should only be performed by designated dealers or authorized small engine centers (for engine repairs) so that no unsafe conditions or modifications are made.
- This vehicle may have been supplied to you completely assembled. To prevent injury or death read and follow the assembly instructions to make sure the machine was assembled properly.
- NEVER adjust, repair, or clean the vehicle while it is in motion or with the engine running.
- All screws, nuts, and bolts must be properly tightened to make sure the vehicle is in safe operating condition.
- Prevailing-torque type locknuts must be replaced with new after the old locknuts have been removed.
  - a. Replace with the same type of locknut to make sure they function properly. Refer to the Owners Manual / Parts Guide maintenance section for more information on locknuts.
- Vehicle modification or removal of original equipment or safety decals can render the machine unsafe for operation.
- Keep all guards and shields in place at all times.
  - a. Prevent accidental contact by the operator or service personnel while the machine is running.
  - b. The guards over the brake, clutch or torque converter, axle and drive sprockets also help prevent mud and debris from coming in contact with those items.
- NEVER tamper with, alter, or change the vehicle's engine governor settings.
  - a. The governor, as set by the engine manufacturer, limits maximum engine RPM.
  - b. Excessive engine speed is potentially dangerous to operator, passengers, bystanders, and engine.
- Make any repairs or adjustments to the vehicle only when the engine is off and the vehicle is stopped. The spark plug wire MUST be disconnected and kept away from the spark plug AND the negative (-) battery cable disconnected from the battery to prevent accidental starting.
  - a. When working on, around, or restarting the engine, use extreme caution to avoid contact with the muffler, cylinder head, engine, shield, or any potentially hot area on or around the engine.
  - b. Ensure that all guards and shields are in place prior to starting the engine.
- Brush Bars assembled to this vehicle are for limited brush protection and to reduce the likelihood of a properly restrained occupant from being crushed as a result of a vehicle roll-over. Periodic checks for loose fasteners per the vehicle maintenance schedule should be performed.
- **DO NOT** disconnect the negative battery cable with engine running. This may damage the Electronic Control Unit (ECU).

## WARNING

MAINTENANCE



- NEVER place hands, feet, or any body parts or clothing near the engine, wheels, chain, and other rotating parts of the vehicle while riding or running the engine.
  - a. Use caution even after the engine has been running, since the engine, shields, and other drive components may be extremely hot.
- DO NOT touch engine, exhaust pipe, shields, or muffler. Allow surfaces to cool before servicing.



## WARNING

SAFETY



- NEVER start the engine without the operator properly seated and the restraint system properly adjusted and secured with the brake applied and the vehicle in neutral (if equipped).
- Be sure the passenger restraint system (i.e. Seat Belt) is properly adjusted and fastened at all times during operation.
  - a. If the passenger restraint system is not properly used by the operator and/or passenger, loss of control and possible personal injury and/or vehicle damage may occur.
- When there is no passenger in the vehicle, the passenger seatbelt must be securely fastened within the vehicle.
  - a. If the passenger restraint system is not properly used by the operator and/or passenger, loss of control and possible personal injury and/or vehicle damage may occur.
- Operator and any passengers MUST wear a properly fitting motorcycle helmet approved by agencies such as the Department of Transportation (DOT), Safety Helmet Council of America (SHCA), or Snell Memorial Foundation (SNELL).
  - a. Most accident fatalities are due to head injuries.
  - b. Operator (and any passenger) should also wear face shields or goggles, boots, gloves and other appropriate protective clothing.
- Exhaust fumes are toxic.
  - a. California Proposition 65 WARNING: Gasoline engine exhaust from this machine contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm. The engine exhaust contains carbon monoxide, which is a tasteless, odorless, poisonous gas.
  - b. NEVER operate this machine indoors or in an enclosed area without adequate ventilation.
- ✓ Safety decals must be replaced if they become unreadable or detached from the vehicle.
  - a. If decals are unreadable or missing, warning of potential hazards or safety requirements may be lacking.
- ✓ Read and keep all supplied printed material.
  - a. Supplements to this Operator/Safety Manual contain additional information relative to your specific vehicle model. It is important to keep all of these documents for reference.

## ! WARNING



- Vehicle must be stored where gasoline fumes will not reach an open flame, spark, or other source of ignition.
    - a. For long-term storage, fuel tank should be drained in an open, cool area.
    - b. Engine must be allowed to cool before storage in any enclosure.
    - c. NEVER store the Utility Vehicle in close proximity to appliances such as hot water heaters or furnaces.
  - Check fuel supply before each use.
    - a. NEVER fill fuel tank while the engine is running or hot.
    - b. DO NOT overfill tank.
    - c. ALWAYS allow at least ½" of expansion space at the top of tank.
    - d. There should not be any fuel in the filler neck.
    - e. Replace cap tightly to prevent a fuel spillage fire hazard.
- NOTE: Always use an original gas cap or OEM (Original Equipment Manufacturer) replacement.
- f. NEVER fill fuel tank while the vehicle is inside a building.
  - g. After filling the tank, move the vehicle at least ten feet before attempting to start the engine.

- E15** • NEVER use E-15 or E-85 fuel or blends with Ethanol content in excess of 10%. Ethanol blends in excess of 10% will cause damage to the engine and void manufacturer warranty.
- E85**
  - a. Use regular unleaded 89 octane gasoline with up to a 10% ethanol blend.
  - b. This engine supplied with this Utility Vehicle is NOT designed for Flex Fuel operation.

- When refueling use a (UL) approved non-metallic container that has no screen or filter. Set the container on the ground before fueling to eliminate static discharge and do not use methanol or ethanol fuels.

- Do not smoke or use electrical devices including cell phones while refueling.

## ! WARNING



- Always check wheel lug nut torque values two hours after initial operation and two hours after each tire repair and/or replacement. Routinely check lug nut torque valves every 100 hours of operation.
- Check tire pressure before each use.
  - a. Prior to operating the vehicle check and adjust tire pressure to the proper operating pressure as indicated on the sidewall of each tire or in the Owners' Manual. A tire pressure gauge is required to obtain accurate readings.

## ! WARNING



- Washing or operating the vehicle in freezing temperatures can result in water freezing in the throttle cable conduit and/or on the throttle mechanism.
  - a. This may result in the throttle sticking which can cause the engine to continue to run and result in loss of control.
- Keep the engine free of dirt and debris, especially in the throttle linkage area.

## ! WARNING



- Battery fumes are explosive. A spark will ignite battery fumes. Wear a face shield when charging or jumping a battery. Follow all battery safety rules outlined in this manual.
- Avoid battery acid spills. Do not get battery acid on eyes, face, or other body parts. Flush eyes and other body parts immediately with water for at least 15 minutes if battery acid has gotten on them.
- **Do Not Jump Start an EFI Vehicle:** This may damage the Electronic Control Unit (ECU). Should the battery loose charge, turn key to "run" position and use the recoil start.

## ! CAUTION - TRANSPORTING

*When transporting any utility vehicle with a windshield or roof installed do NOT exceed 55 mph.*

## ! CAUTION - LOW OIL

*This utility vehicle may be equipped with a Low Oil Indicator Light located on the left hand side of the dash panel. This light will come on when the key is turned to the "on" position, and then go off after the engine is started. While operating the vehicle, if the oil light becomes illuminated, immediately turn the key to the "off" position to stop the engine.*

## ! CAUTION - EFI

*Electronic Fuel Injection (EFI) is an electronically-controlled fuel management system which is monitored by an Electronic Control Unit (ECU). Utility vehicles with EFI are equipped with a Malfunction Indicator Light (MIL). This light will illuminate when the key is turned to the "on" position and then go off after the vehicle is started. If problems or faults are detected, this light will illuminate while the engine is running. Servicing by an authorized dealer is necessary.*

## ! NOTICE - HIGH ALTITUDE USE CARBURETED MODELS ONLY



**Continual operation of your vehicle in altitudes in excess of 5000 feet, will require the installation of a high altitude jet kit. This service should be performed by an authorized service center. Please refer to your engine owner manual or call American LandMaster customer service at 800-643-7332**



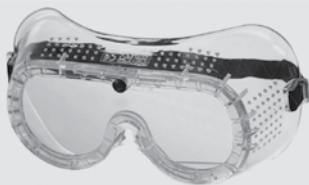
# 48 VOLT UTILITY VEHICLE SPECIFIC WARNINGS & CAUTIONS - BEFORE INITIAL USE

## ! WARNING

48 VOLT MODELS

- Do NOT let metal objects fall from the seat onto the top of your batteries. This may cause a serious power short and possibly a fire.
- Hydrogen gas is generated as a natural part of the lead acid battery charging process. A 4% concentration of hydrogen gas is explosive and could cause severe injury or death. Because hydrogen gas is lighter than air, it will collect in the ceiling of buildings necessitating proper ventilation. Charging must take place in an area that is adequately ventilated (minimum of 5 air exchanges per hour).

To reduce the chance of battery explosion that could result in severe injury or death, never smoke around or charge batteries in an area that has an open flame or electrical equipment that could cause an electrical arc. Pay particular attention to natural gas or propane gas water heaters and furnaces.



- Always wear a safety shield or approved safety goggles when adding water or charging batteries.

Any electrolyte spills should be neutralized with a solution of 1/4 cup (60ml) sodium bicarbonate (baking soda) dissolved in 1 1/2 gallons (6 liters) of water and flushed with water.

Overfilling batteries may result in electrolyte being expelled from the battery during the charge cycle. Expelled electrolyte may cause damage to the vehicle and storage facility.

Aerosol containers of battery terminal protectant must be used with extreme care. Insulate metal container to prevent can from contacting battery terminals which could result in an explosion.

- Deep water crossings MUST be avoided.

## ! CAUTION

48 VOLT MODELS

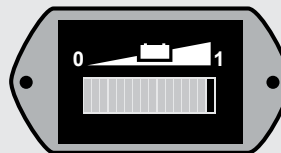
### BATTERY PROLONGED STORAGE

- All batteries will self discharge over time. The rate of self discharge varies depending on the ambient temperature and the age and condition of the batteries.
- A fully charged battery will not freeze in winter temperatures unless the temperature falls below -75° F (-60° C).
- For winter storage, the batteries must be clean, fully charged and disconnected from any source of electrical drain. Please assure that the key switch is in the off position for storage.
- As with all electric vehicles, the batteries must be checked and recharged as required or at a minimum of 30 day intervals.

### CHARGE GAUGE

**Before operating the 48V, make sure the batteries have a full charge!**

Located on the dash, the charge gauge indicates approximately the state of charge of the batteries. Far right (as shown) indicates batteries are fully charged, far left indicates a low charge.



**BATTERY GAUGE:** Showing a full charge.

### WASHING YOUR VEHICLE

It is acceptable to wash your electric utility vehicle, though a pressure washer should not be used, and common sense should be exercised. Remember that some of the electronics in the controller and charging system are sensitive to water and corrosion. The charger should be protected during washing by placing a plastic bag or other protection over the top of the charger before washing. Allow for any water that does get on/in the charger to dry out before using.

## NOTE

48 VOLT MODELS

### LIMITED ELECTRIC RUNTIME:

Plan carefully before using this vehicle to go significant distances over questionable terrain. Remember that a one hour drive may take many hours to walk out should you run out of battery power or be stranded by becoming stuck on unsuitable terrain.

# ARE YOU READY TO RIDE?

## SOME WORDS ABOUT RESPONSIBLE OPERATION AND RIDER SAFETY

The following pages present important information and recommendations to help you operate your vehicle responsibly and safely. Forming good habits and developing driving skills is an ongoing process. Even if you are an experienced driver, take time to become familiar with the controls, handling characteristics, capabilities, size and weight of your vehicle. Please read through these pages thoroughly.

### Qualifications for Utility Vehicle (UTV) Users

This vehicle is restricted to use by operator and passenger with a minimum age of sixteen (16) years as indicated on the vehicle and vehicle specific literature. UTV's are intended for use by operators who meet the physical and cognitive capabilities set out by the manufacturer in this manual and in the material provided with the vehicle.

### Off-Road Use Only:

Your UTV and its tires are designed and manufactured for off-road use only and not for use on paved surfaces. Driving on paved surfaces can affect the handling, control, and cause excessive wear to your tires.

When driving off-road, also remember to always obey local off-road driving laws and regulations. Obtain permission to drive on private property. Avoid posted areas and obey "NO TRESPASSING" signs.

Unless equipped for such, you should never drive your vehicle on public streets, roads or highways, even if they are not paved. Drivers of street vehicles may have difficulty seeing and avoiding you, which could lead to a collision.

## CONSUMER RESPONSIBILITY FOR SAFE USE AND MAINTENANCE OF A UTV

1. **UTV's shall not be modified from the manufacturer's original design and configuration.**
2. **UTV's shall not be used to perform racing, stunt riding, jumps, spinouts, donuts, or other maneuvers as they may cause loss of control. As such, these activities are likely to result in possible injury to the operator, passenger, bystanders, or all.**
3. **Prior to each use, the operator shall perform the pre-operational checks specified by the manufacturer, and further verify:**
  - a. Smooth throttle operation and positive return of the throttle linkage to a closed throttle position when released;
  - b. That the throttle cable and linkages operate properly and the throttle cable or other linkages are adjusted properly;
  - c. That the steering mechanism(s) is adjusted and operates smoothly;
  - d. That the engine stop switch or keyswitch is properly functioning;
  - e. That all guards and shields originally supplied by the manufacturer are in proper place in serviceable condition;
  - f. That engine idle speed is below the point of clutch or torque converter engagement;
  - g. That the gas tank is in good condition and the proper gas cap is fastened securely;
  - h. That the braking system is functioning properly;
  - i. That all safety labels are in place, legible and understood;
  - j. That any and all guards, torque converter covers, or other covers or guards supplied by the manufacturer are in place and in serviceable condition;
  - k. That tires are in good condition, inflated properly, and have sufficient tread remaining; and
  - l. That all fasteners are in place and tightened securely.
4. **UTV engines shall not be started unless the operator is seated and restrained in proper position for vehicle operation and the brake is fully engaged and locked with the park brake mechanism.**
5. **Long hair, loose clothes, or jewelry can get caught in moving parts below the seat or surrounding environment. Remove or tie back anything loose that can reach below or behind the seat before riding.**
6. **UTV's shall only be fueled by personnel knowledgeable with regard to proper fuel selection and fueling techniques.**
7. **UTV operators and passengers shall adhere to all manufacturer's recommendations and instructions, as well as comply with all laws and ordinances, and the following:**
  - a. Operators shall stay seated with both hands on the steering wheel and both feet in the vehicle at all times, whether moving or stationary, unless the vehicle is stopped completely and the engine has been shut off.
  - b. Passengers shall remain seated with arms and legs inside the vehicle at all times during operation.
  - c. Shall observe minimum age restrictions.
  - d. Shall not allow smoking in the vehicle.
  - e. Persons under the influence of drugs, alcohol, or intoxicants shall not supervise, operate, or ride in a UTV.
  - g. UTV's shall operate only on a surface or terrain recommended by the UTV's manufacturer.
  - h. UTV's shall not be operated on roads, streets, highways, or any other location where road vehicles are intended to travel.

(cont. next page)

### CONSUMER RESPONSIBILITY FOR SAFE USE AND MAINTENANCE OF A UTV (cont.)

**8. Persons with the following conditions shall not ride in or operate a UTV:**

- a. Those with heart conditions
- b. Pregnant women
- c. Persons with head, back, or neck ailments, or prior surgeries to those areas of the body.
- d. Persons with any mental or physical conditions, which may make them susceptible to injury or impair their physical dexterity or mental capabilities to recognize, understand, and perform all of the safety instructions, and be able to assume the hazards inherent in motor vehicle use.

**9. No operator or other person shall contact any portion of the engine, wheels, or drive train for any purpose including maintenance until the engine has been turned off and allowed to cool, and the UTV is in a stable and stationary position.**

**10. Passenger restraints must be used in accordance with, and limited to, the manufacturer's guidelines.**

**11. UTV components shall be maintained and repaired in accordance with the manufacturer's specifications and utilizing only the manufacturer's authorized replacement parts with installation performed by designated dealers or other skilled persons.**

**12. Control Speed.**

Driving at excessive speeds increases the likelihood of an accident. In choosing an appropriate speed, you must consider the capability of your vehicle, the terrain, visibility, and other operating conditions, in addition to the skill and experience of the driver.

**13. Use of this Vehicle on Unfamiliar or Rough Terrain**

- a. Failure to use extra care when operating this vehicle on unfamiliar terrain could result in the unit overturning or going out of control. Go slowly and use extreme caution when operating on unfamiliar terrain. Always be alert to changing terrain conditions when operating the vehicle.
- b. Before driving in an unfamiliar area, always check the terrain thoroughly. Don't drive fast on unfamiliar terrain or when visibility is limited (it is often difficult to react to hidden obstructions like rocks, bumps, or holes).
- c. Never drive past the limit of visibility. Maintain a safe distance between your vehicle and other off-road vehicles. Always exercise caution and use extreme care on rough, slippery and loose terrain.

**14. Do not perform stunts**

- a. Attempting wheelies, jumps, and other stunts increase the chances of an accident, including an overturn. Never attempt stunt riding of any type and ride responsibly. Don't try to show off.
- b. Operating this vehicle without your seat belt could cause you to be thrown from the vehicle, causing serious injury or death.

### **WARNING**

***Always perform a pre-ride inspection of the vehicle using the checklist provided on the back cover of this manual.***

# section 3 operation

**See back cover for a pre-ride checklist**

## **WARNING - BEFORE YOU DRIVE**

- 1. Always perform a pre-ride inspection of the vehicle using the checklist provided on the back cover of this manual.**
- 2. Check tire pressure before each use.**
  - a. Prior to operating the vehicle check and adjust tire pressure to the proper operating pressure as indicated on the sidewall of each tire or in the Specifications section of the Operator's Safety Manual. A "low pressure" tire gauge is required to obtain accurate readings.
- 3. Check fuel supply before each use.**
  - a. NEVER fill fuel tank while the engine is running or hot.
  - b. DO NOT overfill tank.
  - c. ALWAYS allow at least ½" of expansion space at the top of tank.
  - d. There should not be any fuel in the filler neck.
  - e. Replace cap tightly to prevent a fuel spillage fire hazard.

**NOTE: Always use an original gas cap or OEM (Original Equipment Manufacturer) replacement.**

  - f. NEVER fill fuel tank while the vehicle is inside a building.
  - g. After filling the tank, ensure that no fuel has spilled around the vehicle. If there is spilled fuel present, move the vehicle at least ten feet before attempting to start the engine.
- 4. NEVER start the engine without the operator properly seated and the restraint system properly adjusted and secured with the brake applied and the vehicle in neutral.**
- 5. Be sure the passenger restraint system (i.e. Seat Belt) is properly adjusted and fastened at all times during operation.**
  - a. If the passenger restraint system is not properly used by the operator and/or passenger, loss of control and possible personal injury and/or vehicle damage may occur.
- 6. When there is no passenger in the vehicle, the passenger seatbelt must be securely fastened within the vehicle.**
  - a. If the passenger restraint system is not properly used by the operator and/or passenger, loss of control and possible personal injury and/or vehicle damage may occur.
- 7. Keep the engine free of dirt and debris, especially in the throttle linkage area.**
- 8. NEVER start the engine without checking to see that the throttle control is in idle position.**
- 9. ALWAYS use extreme caution when starting the engine.**
  - a. Hot engine, muffler, shields, or drive components can burn on contact.
- 10. NEVER operate the machine while under the influence of alcohol, drugs, or medication of any kind.**
  - a. Such operation is dangerous to yourself and/or others.
- 11. NEVER use hand held electronic devices or items that can distract from safe driving practices.**
  - a. Driving while distracted can result in loss of vehicle control, accident and injury.
- 12. Long hair, loose clothes, or jewelry can get caught in moving parts below and behind the seat or surrounding environment.**
  - a. Remove or tie back anything loose that can reach below and behind the seat before riding.



## WARNING - WHILE OPERATING THIS VEHICLE



- 1. NEVER place hands, feet, hair or any body parts or clothing near the engine, wheels, and other rotating parts of the vehicle while riding or running the engine.**
  - a. Use caution in performing required maintenance on or near operating engine.
  - b. Use caution after the engine has been running, since the engine and other drive components may be extremely hot.
- 2. Wet, slippery, rough, or sloped terrain is potentially dangerous and may result in injury if proper caution is not observed.**
  - a. ALWAYS SLOW DOWN
  - b. Operator must use mature judgment, skill, and experience to choose a speed suitable for terrain and riding conditions in protecting operator, passenger, and/or any bystanders.
  - c. Operator must use mature judgment, skill and experience in choosing suitable terrain for individual operational capabilities.
- 3. ALWAYS SLOW DOWN when turning.**
  - a. This vehicle is not a passenger car. High-speed turning and failure to operate this vehicle correctly may cause loss of control, vehicle rollover and/or possible death or injury to the vehicle occupant(s).
  - b. Turning on a slope increases the risk of rollover.
  - c. Practice driving in a safe open area to develop a feel for the vehicles performance and handling characteristics, size and weight.
- 4. When turning on pavement, loose gravel, or similar surfaces, there is an increased risk of loss of control. \*\* ALWAYS SLOW DOWN! \*\***
- 5. Operating the vehicle in conditions where water, mud, snow, dirt, sand, or other debris can get into the throttle cable conduit and/or on the throttle mechanism may cause binding of the cable and/or the throttle mechanism.**
  - a. This may result in the throttle sticking which can cause the engine to continue to run and result in loss of control.
- 6. Keep hands, feet, and all body parts in the vehicle at all times.**
  - a. In the event of a vehicle roll-over, do NOT extend arms, legs or any other extremity outside the vehicle as possible personal injury can occur.
- 7. Keep hands and feet on controls**
- 8. STOP the vehicle and back slowly down any hill that the vehicle lacks the power or traction to climb. Do NOT turn across the slope or try to turn around.**
  - a. Turning on a slope increases the risk of rollover.
  - b. Control the descent speed with the brake (left foot pedal).
  - c. Re-applying the throttle when facing up a steep hill increases the risk of the front tires leaving the ground and the vehicle over-turning.
- 9. STOP the engine if the machine makes unusual noises or vibrations.**
  - a. Check the vehicle for damage.
  - b. Excessive noise or vibration is a sign of loose or worn parts.
  - c. Do not attempt to use the vehicle until it has been serviced to correct the issue.
- 10. Operating this UTV on paved surfaces may seriously affect handling and control of the vehicle, and may cause the vehicle to go out of control.**
- 11. Operating this UTV on public streets, roads or highways could result in a collision with another vehicle. Never operate this UTV on any public streets, roads or highways, whether they are dirt, gravel or paved surfaces unless properly equipped.**
- 12. Always remove the ignition key when the vehicle is not in use to prevent theft or unauthorized use.**

# Gasoline Utility Vehicles (Continued on next page)

This section covers the operation of the gasoline powered 2WD and 4WD Utility Vehicles.



## NOTE

**Perform a Pre-Ride Inspection using the list on the back cover of this book before each use to ensure that your vehicle is in proper working order**

## General Operation - All Gas Models

Start your Utility Vehicle by following the starting procedures as noted below.

1. Depress brake pedal with your foot and hold. Pull firmly up on the park brake lever with your hand until the lever is tight.
2. Place gearshift in neutral.
3. Apply choke fully when engine is cold (carbureted models only).
4. Turn ignition key fully clockwise and hold to start engine (see note for EFI priming at right).
5. Release ignition key to run position and choke (if applicable) to normal operating position immediately after engine starts.
6. Release parking brake.
7. Turn ignition key counterclockwise to stop engine.

Driving is as easy as driving a car with an automatic transmission. A simple forward and reverse shifter provides direction control. Never shift while the vehicle is moving, as damage to the drive train may occur.

For convenience, some models include a back-up pull-rope starter mechanism on the engine.

Braking is accomplished by simply releasing the throttle pedal and depressing the brake pedal that is located on the floorboard left of the accelerator. A lever action parking brake control is mounted on the center console located between the operator and passenger seats. Pull up on the lever and depress the button on the park brake control lever to release the park brake.

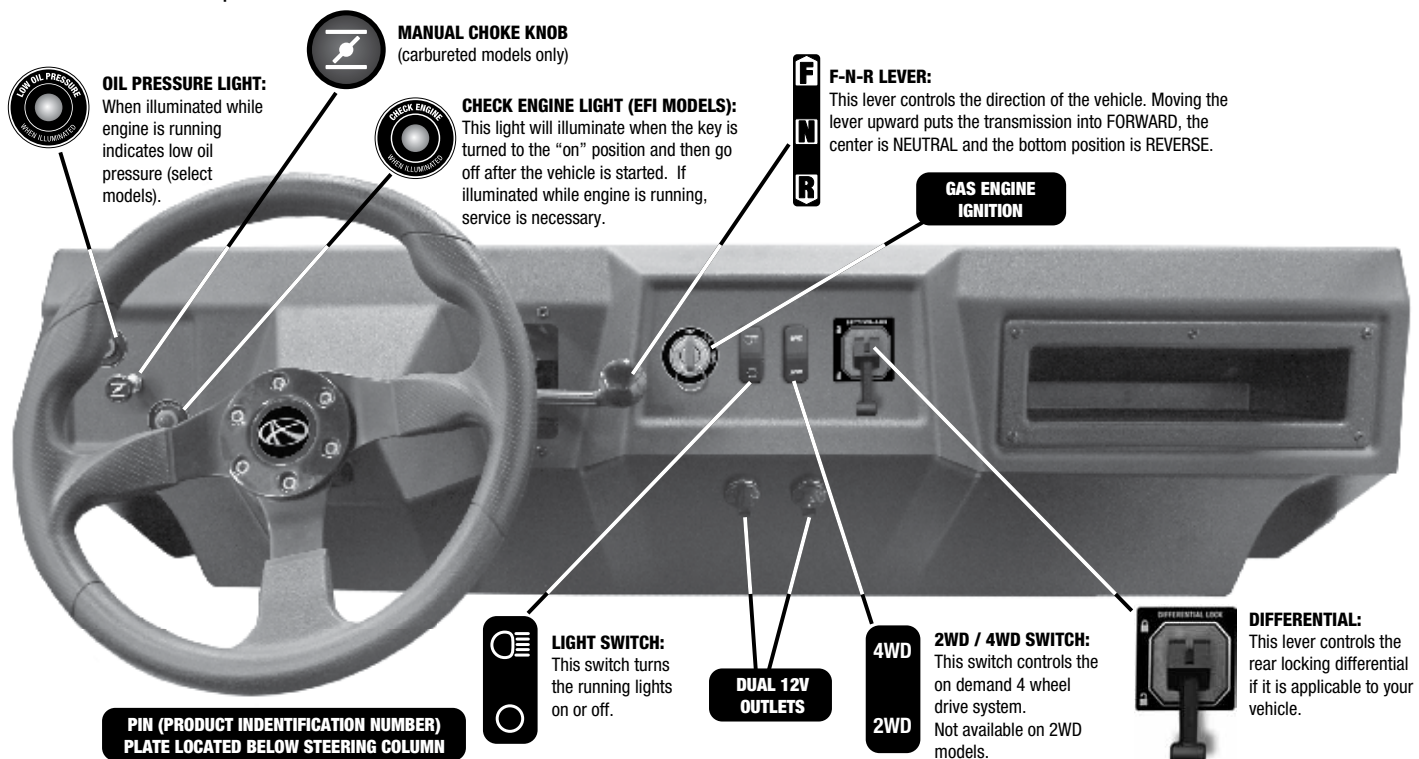
## Operation of the rear axle differential lock

The rear axle on select models is equipped with a manually operated differential lock (independent rear suspension models feature an auto locking differential - this will sense wheel slip and automatically engage the differential lock). It is engaged (locked) by moving the dash mounted differential lever to the up position. Locking the differential sends equal power to both rear wheels for better traction. It may be used in both 2WD and 4WD modes.



## NOTE - EFI PRIMING

**EFI equipped vehicles that are being started for the first time after purchase or have had their fuel tanks refilled after having run out of fuel will need to have their fuel systems primed. This is because the EFI unit uses two fuel pumps. The first is a pulse pump which is operated by engine rotation drawing fuel from the fuel tank and supplying the second pump which is electric. The electric fuel pump pressurizes the fuel and delivers it to the engine. It operates when the ignition key is placed in the RUN position. Begin priming the system by turning the key switch to RUN for one minute. Allow electric fuel pump to cycle. Turn key switch to START and crank engine continuously, cycling the pulse fuel pump, until the engine starts but for not more than 10 seconds should it not start. Allow a 60 second cool down period and attempt to start the engine again. (Failure to follow these guidelines can burn out the starter motor.) This procedure may need to be repeated as many as 4 times. If after 4 times, the engine does not start, contact American LandMaster Customer Service.**



## General Operation - All Gas Models (continued)

### CAUTION

**Engine should be at idle before selecting 4WD mode. Sudden engagement of 4X4 switch under power may damage the drive train. Failure to do so may void warranty.**

### NOTE

**Locking the differential on paved or hard surfaces may increase steering effort and tire wear.**

## 4WD Operation

Four wheel drive models are equipped with an electronically activated "On Demand" 4WD system. To engage the 4WD system, simply flip the dash mounted switch to 4WD. Engagement of the system should always be done with the vehicle stopped and the engine at idle speed.

This Hilliard™ system is an "On Demand" 4WD system. When rear tire slip is sensed, an overrunning clutch in the front differential will engage the front wheels. Note that even though you may be in 4WD, the front wheels may not be engaged until a demand is placed on them due to loss of traction at the rear wheels.

Because the power transfer is automatic, you may operate the vehicle in 4WD mode continuously without affecting steering effort or tire wear.

## Electric Utility Vehicles

This section covers the operation of the Electric 2WD Utility Vehicles.

Some ASW models are configured as street legal Low Speed Vehicles (LSV). Low Speed Vehicles may be used on public roads (check local ordinances). Low Speed Vehicles do NOT have comparable crash protection to a car or truck. Follow all safety procedures. Avoid roads with considerable traffic. Avoid driving on public roads at night or in low visibility. Never drink and drive. Check local laws and ordinances about the use of LSV's in your area.

### NOTE

**Keyswitch must be in the "RUN" position for vehicle to operate.**

## General Operation - Electric Models

Start your Utility Vehicle by following the starting procedures as noted below.

1. Depress brake pedal with your foot and hold. Pull firmly up on the park brake lever with your hand until the lever is tight.
2. Place FWD/REV switch to neutral position.
3. Turn keyswitch to RUN position.
4. Select desired direction with the FWD/REV switch.
5. Release parking brake.

Driving is as easy as driving a car with an automatic transmission. A simple forward and reverse shifter provides direction control. Never shift while the vehicle is moving, as damage to the drive train may occur.

Braking is accomplished by simply releasing the throttle pedal and depressing the brake pedal that is located on the floorboard left of the accelerator. A lever action parking brake control is mounted on the center console located between the operator and passenger seats. Pull up on the lever and depress the button on the park brake control lever to release the park brake.

## Turn Signal / Horn

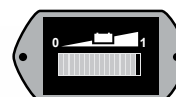
Select models may be equipped with a horn and/or turn signals.



### MODE SWITCH:

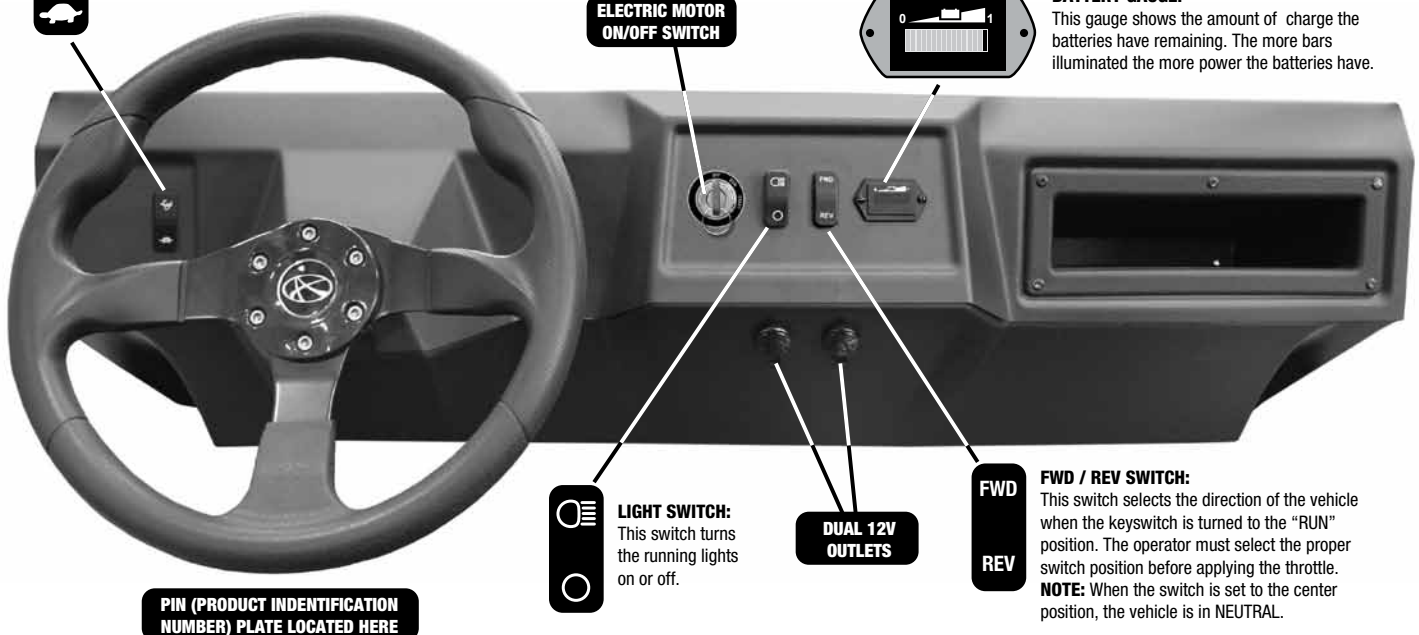
This switch is used for "FAST" mode (M1) with speeds up to 22 mph, or "SLOW" mode (M2) with speeds up to 10 mph. "SLOW" mode has a more gentle acceleration and a greater vehicle range.

### ELECTRIC MOTOR ON/OFF SWITCH



### BATTERY GAUGE:

This gauge shows the amount of charge the batteries have remaining. The more bars illuminated the more power the batteries have.



**PIN (PRODUCT IDENTIFICATION NUMBER) PLATE LOCATED HERE**



**LIGHT SWITCH:**  
This switch turns the running lights on or off.

**DUAL 12V OUTLETS**

**FWD  
REV**

### FWD / REV SWITCH:

This switch selects the direction of the vehicle when the keyswitch is turned to the "RUN" position. The operator must select the proper switch position before applying the throttle.  
**NOTE:** When the switch is set to the center position, the vehicle is in NEUTRAL.

# DRIVING RECOMMENDATIONS



## DRIVING WITH A PASSENGER(S)

- Passengers must be tall enough to comfortably and safely sit in a passenger seat with the seat belt secured, and with the ability to grasp the hand hold
- Ensure all passengers are wearing proper protective clothing, including helmet and eye protection.
- Do not exceed the recommended number of passengers for your vehicle. See specifications section. Vehicles equipped with the rear facing flip seat can safely carry an additional (2) passengers.
- All passengers must ride in passenger seats equipped with proper restraints and safety gear.
- Always slow down. Avoid aggressive maneuvers that will cause discomfort or injury to a passenger.
  - a. Operator must use mature judgment, skill and experience to choose a speed suitable for terrain and riding conditions in protecting operator, passenger, and/or bystanders.
  - b. This vehicle is not a passenger car. High-speed turning and failure to operate the vehicle correctly may cause loss of control, vehicle rollover and/or possible death or injury to the vehicle occupant(s).
- Handling of the vehicle may change with passengers and/or cargo. Increase time and distance for braking.
- Read, understand and follow all instructions and warnings in this manual and on the safety decals located on the utility vehicle.

## DRIVING ACROSS A HILLSIDE

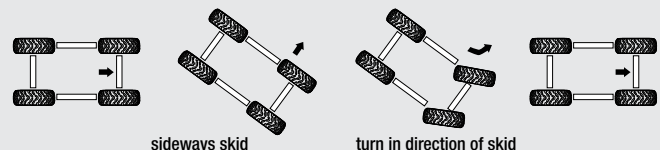
- Avoid driving across hillside slopes whenever possible. Slow down and exercise extreme caution. Improper driving technique or crossing an excessively steep grade could result in rollover and injury or death
- Keep hands and feet and all body parts in the vehicle at all times
- Do not cross hills that exceed 15 degrees or 26% grade
- Keep front wheels straight when crossing a hillside. Steep slopes may require turning the front wheels slightly uphill to maintain a straight line of travel
- If the vehicle begins to tip while crossing a hillside, immediately turn the front wheels in the downhill direction to regain stability and control.
- Do not stop or start suddenly or over accelerate on hills. Loss of control and rollover could result.

## DRIVING UPHILL AND DOWNHILL

- Avoid excessively steep hills, and inspect hill for slippery or loose surfaces before attempting to climb or descend.
- Keep hands and feet and all body parts in the vehicle at all times
- Note that towing, braking and traction are greatly diminished in hill climbing or descending.
- Keep front wheels straight when climbing and/or cresting and descending hills
- Do not stop or start suddenly or over accelerate on hills. Loss of control and rollover could result.
- If the vehicle loses power or traction and stops while climbing a hill, immediately engage the service brake and back slowly down the hill, maintaining a straight, downhill line of travel. Attempting to turn the vehicle could result in a rollover.
- When descending a hill, over application of the service brake may cause skidding and loss of control. Apply the brakes slightly to aid in slowing down.

## DRIVING ON SLIPPERY SURFACES

- Note that towing, braking, steering function and traction are greatly diminished when driving on slick or slippery surfaces. Always slow down and exercise extreme caution.
- Do not operate the vehicle on excessively slick, rough or loose terrain
- Avoid sudden acceleration and deceleration of the vehicle as loss of control may occur
- Avoid sudden changes in direction as steering control is greatly diminished when driving on slick or slippery surfaces.
- Increase time and distance for braking.
- Never apply the brakes during a skid. Correct a skid by turning the steering wheel in the direction of the skid.



## DRIVING RECOMMENDATIONS



### DRIVING OVER OBSTACLES

- Always use caution when driving in unfamiliar terrain to avoid obstructions and obstacles that may be hidden from immediate view. Be constantly alert for hazards such as rocks, ruts, holes, logs and low hanging branches.
- Avoid crossing over large obstacles whenever possible. If unavoidable, use extreme caution and slow down. Damage to your vehicle may occur if the obstacle is larger than the ground clearance of your vehicle.
- Keep hands and feet and all body parts in the vehicle at all times
- Have passengers dismount and move away from the vehicle before attempting to drive over an obstacle that could cause rollover.
- When crossing items such as a log, approach the obstacle at 45 degrees to avoid high centering the vehicle.

### DRIVING THROUGH WATER

- Avoid water crossings when possible and never cross a body of water where the depth is unknown. Water crossings present unfamiliar and hidden terrain and obstacles that may cause an accident or damage to your vehicle.
- Your American Landmaster UTV is capable of operating in water to a maximum depth equal to the ground clearance of the floorboards of your vehicle. Driving in deeper water will cause loss of power by submerging the drive system. Additionally, driving in deeper water will cause water ingestion into the engine cooling fan causing damage to the engine and voiding the manufacturer warranty.
- If you must cross a body of water, determine depth of water and current before entering
- Enter and exit the water where both banks have a gradual incline.
- Proceed slowly
- After crossing the water, brake function may be diminished. Apply light pressure to the brake system while driving slowly until the system returns to normal brake operation.
- Frequent water crossings will require more frequent inspection of the engine oil, transaxle oil, and lubrication points of the vehicle.

### DRIVING IN REVERSE

- Take extra precautions when rear view is hindered by cargo. Remove or reposition cargo that may obstruct your view. Use a spotter if necessary to assist in avoiding obstacles or people.
- Always make sure the pathway is clear of all objects when backing up. Know the location of personnel around the vehicle and especially the location of small children.
- Avoid backing down hills
- Back up slowly and avoid sudden acceleration.
- Never turn at a sharp angle when driving in reverse. Sharp turns combined with higher speeds in reverse will result in a rollover and injury or death.

### PARKING THE VEHICLE

- Always put the vehicle in the Neutral gear and apply the parking brake when leaving the unit unattended or parking the vehicle for any amount of time.
- Turn off the engine. Unattended vehicles should have the ignition key removed to avoid theft or unauthorized use of the vehicle.
- Park on a level surface whenever possible
- If parking the vehicle indoors, ensure that the structure is well ventilated and that the vehicle is not parked over any loose debris or flammable materials. Park well away from any potential ignition sources such as appliance pilot lights or source of sparks.
- Avoid parking on an incline whenever possible, if unavoidable see the following recommendations:
  - a. Always apply the parking brake
  - b. Chock the wheels on the downhill side with a wheel chock, rock or large object to prevent the vehicle from rolling.

# section 4 maintenance

## REPLACEMENT PARTS, ACCESSORIES AND SERVICE

Most replacement parts and accessories are typically available from your dealer. Because of immediate availability and convenience, it is recommended that items be ordered from an authorized dealer. Take this manual and all supplements to the dealer when ordering parts in person.

If replacement parts are not available from a dealer, they may be ordered directly from American LandMaster by contacting Customer Service at 1-800-643-7332 or online at [www.americanlandmaster.com](http://www.americanlandmaster.com). Orders may be subject to a minimum fee. A listing of authorized service providers in your area is also available online at [www.americanlandmaster.com](http://www.americanlandmaster.com) or from our Customer Service department. Installation of non-ASW approved parts or accessories could create a substantial safety hazard and increase risk of injury. Only use authorized ASW parts.

Record the Model, Vehicle Identification Number (VIN) and Serial Number in the spaces provided at the front of this Manual.

AIR FILTER ELEMENTS REPLACEMENT PARTS	
Description	Part No.
Briggs & Stratton Air Filter (479cc)	16170
Honda Paper Filter Element (390cc)	2-20153
Honda Foam Filter Element (390cc)	2-20154
Kohler Air Filter / Pre Cleaner (277cc / 429cc)	15771 / 15769
Kohler Air Filter / Pre Cleaner (674cc)	16522 / 16527

OIL FILTER REPLACEMENT PARTS	
Description	Part No.
Briggs & Stratton 479cc	16172
Kohler 674cc Spin-on	16525

TUNE UP KITS (kits include all needed filters, fluids)	
Description	Part No.
KOHLER 277cc	16162
HONDA 390cc	16163
KOHLER 429cc	16872
BRIGGS & STRATTON 479cc	16164
KOHLER 674cc	16935

SPARK PLUG REPLACEMENT PARTS	
Description	Part No.
BRIGGS & STRATTON 479cc	
NGK	BPR6ES
HONDA 390cc	
NGK	BPR6ES
CHAMPION	RN9YC
AUTOLITE	4263 / 63
DENSO	W20EPR-U
KOHLER 277/674cc	
CHAMPION	RC12YC
NGK	BCP5EV
KOHLER	12 132 02-5
KOHLER 429cc	
CHAMPION	RC12LC4
NGK	2262
KOHLER	25 132 27-S

## PERIODIC CHECKS & SERVICES

The general maintenance intervals in the following table are based upon average driving conditions. Driving in unusually dusty areas may require more frequent servicing. Refer to the engine operation manual for detailed information specific to engine maintenance.

## VEHICLE MAINTENANCE SCHEDULE

FLUID LEVEL CHECK AND CHANGE	INSPECTION INTERVAL	MAINTENANCE INTERVAL
Engine Oil	Pre-Ride Inspection	See Engine Mfg Recommendations
Transaxle Oil	6 Months or 200 hours	Yearly or 600 hours
90 deg Gear Box	Monthly	Yearly or 600 hours
Front Differential	Monthly	200 Hours
Brake Master Cylinder	Pre-Ride Inspection	N/A
MECHANICAL	INSPECTION INTERVAL	MAINTENANCE INTERVAL
Cables (brake, throttle, choke, shift, etc.)	Pre-Ride Inspection	Lubricate Monthly (or as required by Pre-Ride Inspection)
Air Filter	Monthly	As required by inspection
Spark Plug	Quarterly	Yearly
Fuel Filter	Annually	Annually or every 400 hours
Fuel Hose	Monthly	As required by inspection
Oil Filter	N/A	With Oil Change
Drive Belt	Monthly	As required by inspection
Drive System (CVT)		
Fasteners	Pre-Ride Inspection	As required by inspection
Tires	Pre-Ride Inspection	As required by inspection
Tire Pressure	Pre-Ride Inspection	As required by inspection
Suspension	Pre-Ride Inspection	As required by inspection
Brakes	Pre-Ride Inspection	As required by inspection

### ENGINE MAINTENANCE

Your vehicle has been supplied with an engine manufacturers manual. Follow all guidelines and recommended maintenance procedures. If for some reason you did not receive an engine manufacturers manual, please contact American Landmaster at 800-643-7332. Manuals are also available for free download at [americanlandmaster.com](http://americanlandmaster.com).

#### General Information

Detailed instructions and recommendations for break-in and regular maintenance are specified in the engine operator's manual. Engine warranty is backed by the engine manufacturer. Please refer to engine manufacturer's manual for engine servicing, lubricating oil levels, oil quality and viscosity recommendations, bolt torques, etc. Special attention should be paid to applicable data that is not duplicated here.

### ENGINE OIL



#### NOTE

GAS MODELS



##### OIL LEVELS:

- Running engine low on oil can cause engine damage and void engine warranty.
- Overfilling of oil level can cause loss of power, engine damage and void engine warranty.

#### Engine Oil Fill and Drain Locations

Refer to the engine manufacturers manual for oil fill & drain locations.

To access oil check, fill and drain locations, flip the seat bottom forward and remove (figure 4.1).



figure 4.1 (seat removal - pull forward and lift up)

If equipped, also remove the underseat storage tray to expose the engine (figure 4.2 and figure 4.3).



figure 4.2 (underseat storage tray removal - lift up and pull out.)



figure 4.3 (exposed engine)

#### Engine Oil Level Check

Check engine oil daily with filler cap/dipstick as follows:

1. Park Vehicle on a level surface, set park brake, turn off ignition switch, and remove key.
2. Remove filler cap/dipstick and wipe it clean.
3. Insert and remove dipstick. Check oil level shown on dipstick.

**NOTE:** Some models may require you to screw the dipstick into the fill neck. (refer to the engine manual)

4. Fill to edge of oil fill hole or to the **FULL** mark on the dipstick with recommended oil when oil levels are low.
5. Replace filler cap/dipstick and tighten securely.

## ENGINE MAINTENANCE CONT.

### Engine Oil Change

Warm oil drains quickly and completely. Therefore, drain used engine oil while engine is still warm as follows:

1. Park vehicle on a level surface, set park brake, turn off ignition switch, and remove key.
2. Place a suitable container below engine to catch used oil. Remove filler cap/dipstick and drain plug.
3. Allow used oil to drain completely and then reinstall and tighten drain plug securely. If unit is equipped with a spin-on oil filter, remove and replace **BEFORE moving to step 4.**
4. Dispose of used motor oil in a manner that is compatible with the environment.  
**Do not throw used oil in the trash. Do not pour it on the ground, or down a drain.**
5. Fill oil to the outer edge of the oil fill hole, using a funnel, per engine manual, with recommended oil.  
Engine must be level when filling.
6. Replace filler cap/dipstick and tighten securely.

### NOTICE - HIGH ALTITUDE USE CARBURETED MODELS ONLY

**Continual operation of your vehicle in altitudes in excess of 5000 feet, will require the installation of a high altitude jet kit. This service should be performed by an authorized service center. Please refer to your engine owner manual or call American LandMaster customer service at 800-643-7332**

### Air Filter Change

1. 2WD air filters can be accessed by tilting the dump bed.
2. 4WD models will require removal of the seat bottom and underseat storage tray to access filter.
3. Replace filter per instructions included in your engine owner manual.

## DRIVETRAIN MAINTENANCE

### DRIVE BELT

#### Drive Belt - 2WD / 4WD

The drive belt is considered a wearable item. Replacement intervals depend on vehicle use and environment. If your belt is slipping it may require replacement.

1. Park vehicle on a level surface, set park brake, place shifter in Neutral, turn off ignition switch, and remove key.
2. Remove the belt covers.
3. "Walk" the belt off of the rear pulley as shown in figure 4.4.
4. Install the new belt on the front pulley first and "walk" it onto the rear pulley.
5. Reinstall the belt guards as shown in figure 4.5.

**Attention: Failure to reinstall the belt guards may void your warranty.**



figure 4.5 (drive belt cover - 2WD unit shown)

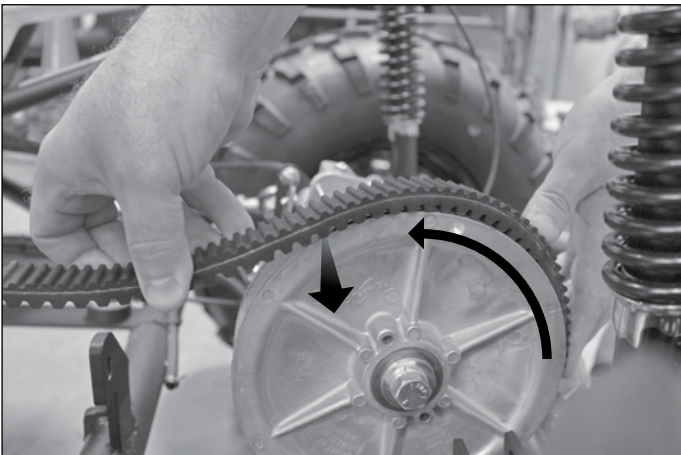


figure 4.4 (removing the exposed drive belt)

## DRIVETRAIN MAINTENANCE CONT.

### TRANSAXLE OIL



#### NOTE

ALL MODELS

#### LOW TRANSAXLE OIL:

Running vehicle low on transaxle oil can damage transaxle and void warranty.

#### Transaxle Oil Type, Fill, and Drain (Refer to figures 4.6 and 4.7)

**SAE 30W oil is used in the transaxle. Oil should be changed after one year of normal use, and every other year after.**

- Fill cap location: At rear driver side (see figure 4.6)
- Drain plug location: At bottom center of transaxle.
- Type of Lubrication: SAE 30W oil.
- Transaxle Lubrication Capacity: 20 oz.

#### Transaxle Oil Maintenance Schedule

- Check transaxle housing for damage and possible oil leakage after each use.
- Check transaxle oil level every 6 months or every 200 hours (whichever comes first).

Park vehicle on a level surface, set park brake, turn off ignition switch, and remove key. Use a clean long bladed screw driver at least 7" long (or similar object). Insert into filler hole until it touches the bottom of gear case. Remove the screw driver. There should be approximately 2 1/4" to 2 1/2" of oil visible on screw driver. Refer to figure 4.7

- Change transaxle oil once a year or every 600 hours (whichever comes first).

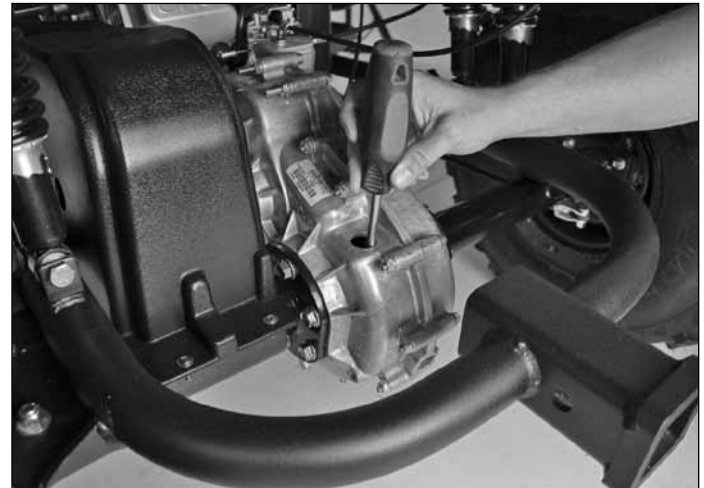


figure 4.7 (checking transaxle oil level)

#### Transaxle Oil Change cont.

3. Allow used oil to drain completely and then reinstall drain plug and tighten it securely.
4. Dispose of used transaxle case oil in a manner that is compatible with the environment. Do not throw used oil in the trash, pour it on the ground, or down a drain.
5. Fill transaxle housing with 20 oz. SAE 30W oil.
6. Replace fill cap and tighten securely.

#### Transaxle Oil - 48 Volt Units (Refer to Figure 4.8)

The 48 volt transaxle requires removal from the vehicle to replace the oil. Oil can be drained from the plug on the lower transaxle cover. Refill the transaxle oil with 10-12 oz. of Mobil fluid 424 using the drain / fill hole.



#### NOTE

48 VOLT MODELS 

#### 48 VOLT TRANSAXLE REQUIRES REMOVAL FROM VEHICLE TO REPLACE THE OIL:

If you are unsure of your ability to remove the transaxle, please use an authorized service provider.

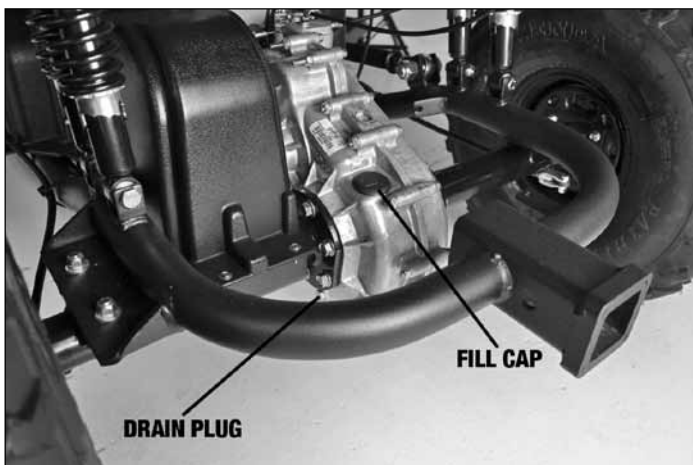
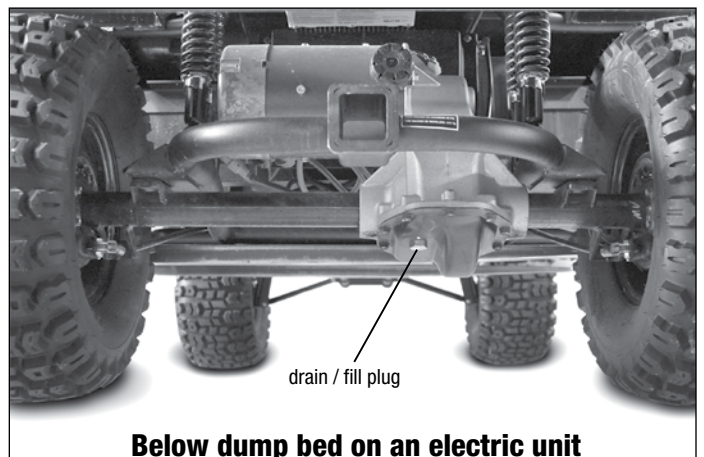


figure 4.6 (transaxle oil fill cap location)

#### Transaxle Oil Change

Warm oil drains quickly and completely. Therefore, drain used transaxle oil while transaxle housing is still warm as follows:

1. Park vehicle on a level surface, set park brake, turn off ignition switch, and remove key.
2. Place a suitable container below the transaxle case to catch used oil. Remove fill cap and drain plug.



#### Below dump bed on an electric unit

figure 4.8 (transaxle fill / drain plug location)

## DRIVETRAIN MAINTENANCE CONT.

### Front Differential Gear Box - 4WD Models

It is recommended that the oil be changed once every 2000 miles (about 150 to 200 hours). To change the oil, follow each step on the procedure listed below.

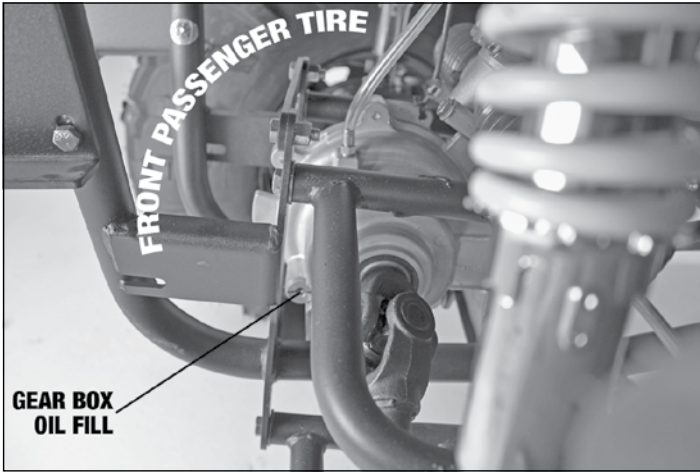


figure 4.9

1. Remove the oil drain plug located on the bottom of the gear case using a 7/16" socket.
2. Let all the oil drain out of the unit. Catch and discard the oil properly.
3. Be sure to clean off any debris on the drain plug and reinstall using a new nylon washer (part # 2-20843). Torque the oil drain plug to 9 ft\*lbs.
4. Remove the oil fill plug using a 5/16" hex key wrench.
5. Add 150 ml. (5 oz.) of Mobil fluid 424 American LandMaster part # 2-20848 *(note: do not use any other type of oil in this system or the 4WD will not operate properly!)*
6. Reassemble the oil fill plug into the gear case and torque to 10 ft\*lbs.

**90° Transfer Gear Box** – It is recommended that the oil be changed once a year or after 600 hours. Refer to figure 4.10.

1. Remove the oil drain plug located on the bottom of the gear case using a ¼" hex key wrench.
2. Let all the oil drain out of the unit. Catch and discard the oil properly.
3. Be sure to clean off any debris on the drain plug and reinstall. Torque oil drain plug to 10 ft\*lbs.
4. Remove the oil fill plug using a ¼" hex key wrench.
5. Add 200 ml. (7 oz.) of 80W90 gear oil.
6. Reassemble the oil plug into the gearcase and torque to 10 ft\*lbs.



figure 4.10

## PULLEY CLEANING

### Driver Pulley Maintenance

The following pulley cleaning instructions are provided by CVTech, the pulley manufacturer.



#### IMPORTANT NOTICE!

- A mechanically skilled individual should carry out Variable-Speed Drive maintenance and repair operations.
- ⓘ Identifies operations where a risk of serious injury exists when instructions are not properly followed.
- ✋ Identifies a step where there exists a risk of part deterioration or component malfunction.
- The Tightening Torque Values shown must be precisely applied.
- The images are used for representations purposes only. Items may differ from illustration.

### Limit of Liability

In no event shall CVTech be liable for damage or injury due to poor text interpretation, improper Variable-Speed Drive handling or misuse of the recommended tools.

### Maintenance Frequency

The CVTech Variable-Speed Drive requires no lubrication. It is designed to run dry. However, basic cleanliness rules apply when handling in order to avoid products or particulates getting in contact with Variable-Speed Drive components during reassembling.

### Recommendation

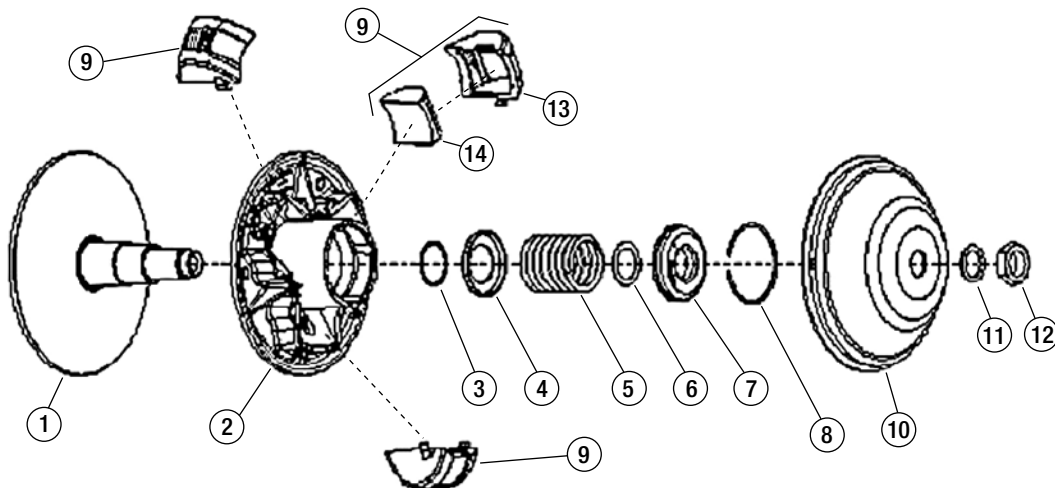
To increase the life of the drive and maintain performance, it is strongly recommended to make a visual check of the CVT:

- Every 150 hours for commercial utility vehicles.

## DRIVETRAIN MAINTENANCE CONT.

### Exploded view of the pulley 0600 (ALM part number 2-20662)

Ref	Description	Qty
1	Fixed Flange	1
2	Sliding Flange	1
3	Washer	1
4	Spring Seat	1
5	Spring	1
6	Washer	1
7	Spring Cover	1
8	Snap Ring	1
9	Block Assembly	3
10	Cap	1
11	Flat Washer	1
12	Nut	1
13	Block	3
14	Weight	3



### Pulley removal from the vehicle



1. Remove the bolt from the engine crankshaft.

Mark the direction of Belt Rotation



2. **Taper Shaft** - Remove the fixed flange using the puller suited for the pulley. Screw in the puller until the pulley is freed from the engine shaft.

3. **Straight Shaft** - Remove the fixed flange by pulling.

**NEVER HIT THE DRIVE PULLEY WITH A HAMMER OR OTHER TOOL TO REMOVE THE PULLEY OFF THE VEHICLE PTO.**

Not to unbalance the pulley, it is best to note the location of the centrifugal blocks in order to place them in the same location during reassembly.



Pulley with the cap are removed

### Cleaning the cap

1. Clean the cap with compressed air.
2. Clean to remove any dust or dirt that can remain on the cap.
3. Pass a scrubbing pad of very fine grade on the cap.
4. Clean the cap with a solvent (brake cleaner) and a cloth.
5. Clean again the parts with compressed air.

### Cleaning the pulley

#### Removing the cap and block centrifugal

Remove the nut (12) and washer (11). Cap and centrifugal blocks are now released.



Pulley which nut and washer are removed



Before cleaning cap

## DRIVETRAIN MAINTENANCE CONT.

### Cleaning the cap - cont.



After cleaning cap

### Cleaning the blocks

1. Clean the blocks with compressed air.
2. Clean to remove any dust or dirt that can remain on the blocks.
3. Pass a scrubbing pad of very fine grade on the blocks.



4. Clean the blocks with a solvent (brake cleaner) and a cloth.
5. Clean again the parts with compressed air.



block before cleaning

block after cleaning

### Cleaning the flanges

1. Clean the flanges with compressed air.
2. Clean to remove any dust or dirt that can remain on the flanges.
3. Pass a scrubbing pad of very fine grade on the angle flanges.
4. Clean the flanges with a solvent (brake cleaner) and a cloth
5. Clean again the flanges with compressed air.



fixed flange before cleaning



fixed flange after cleaning



sliding flange before cleaning



sliding flange after cleaning

### Cleaning the ramps


1. Clean the sliding flange ramps with compressed air.
2. Clean to remove any dust or dirt that can remain on the sliding flange ramps.
3. Pass a scrubbing pad of very fine grade on the sliding flange ramps
4. Clean the sliding flange ramps with a solvent (brake cleaner) and a cloth
5. Clean again the sliding flange ramps with compressed air.



the sliding flange ramps once cleaned

## DRIVETRAIN MAINTENANCE CONT.

### Assembling the cap and block centrifugal

 Put the blocks in their respective location previously noted during disassembly in the sliding flange. Make sure that the tabs are positioned upside up as shown in the figure below.



tab positoning on sliding flange



reassembled pulley



Block on the right position with tabs upside up

Now install the cap, the washer and nut into postion.

 Apply a torque of 95 Nm at 108 Nm with a torque wrench.

### Reassembly of the pulley on the vehicle

 Put the pulley on the vehicle and tighten the bolt holding the pulley with a torque wrench as specified by the vehicle manufacturer.



## CHASSIS, STEERING, SUSPENSION MAINTENANCE

### CABLES

Several cables are used on your vehicle and should be inspected and maintained on a regular basis:

- Throttle cable
- Shift cables
- Differential lock cable
- Brake cables (2WD models)
- Park brake cable (4WD models)
- choke cable

#### Cable Lubrication

Stiff or sticking cables can cause the vehicle to not operate properly. Before attempting to adjust the cables ensure they are lubricated. To lubricate the cables, slide the rubber dust caps up the cable. Drip or spray penetrating oil into the cable housing while working the cable. Do this several times as the oil soaks into the housing. Test the vehicle. If cable is bound or frozen, the cable may require replacement.

#### Center Console Removal

1. 4WD models require removal of drive shaft guard prior to console removal.
2. To remove drive shaft guard, remove (4) bolts as shown in figure 4.11.
3. To remove center console, unscrew perimeter fasteners.
4. Remove center plate by lifting park brake and applying pressure on the back side of the cover and pushing forward (bowing it slightly). Once tab is disengaged, lift cover off of console as shown in figure 4.12.
5. Lower parking brake handle and carefully slide console out toward passenger side.



figure 4.11 (4WD drive shaft location)

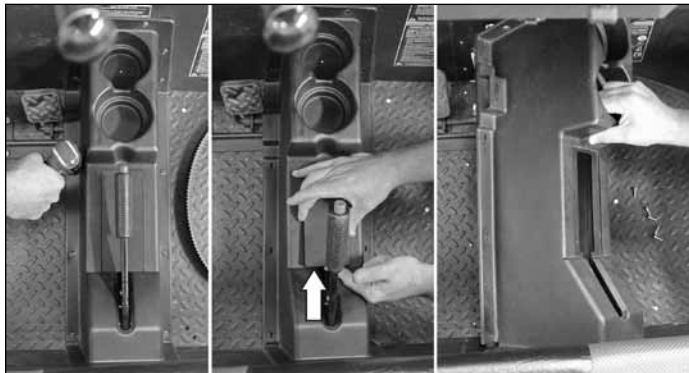


figure 4.12 (center console removal)

### Pedals

The pedals on your vehicle require inspection before each use. Pedals should depress and return freely. Pedals may need lubricated with a lithium grease at the locations shown in figure 4.13.

Non-returning pedals should have the return springs inspected. Center console must be removed to inspect springs.

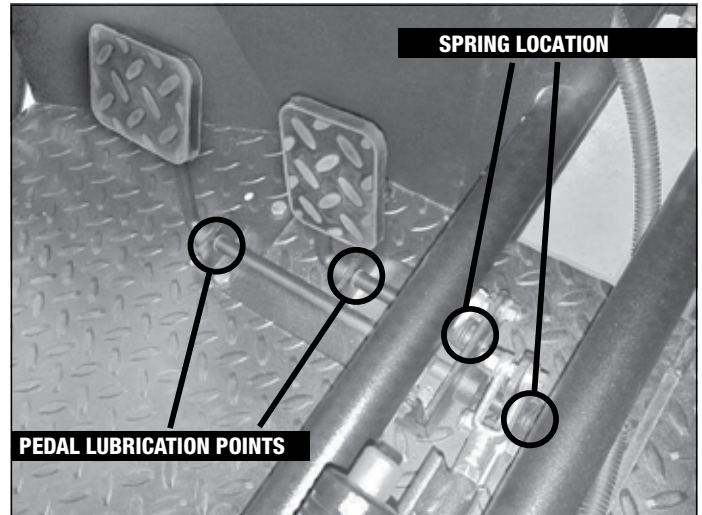


figure 4.13 (pedal lubrication points) NOTE: center console removed.

### HOOD REMOVAL

The hood of the vehicle can be removed with 4 fasteners.

1. Using ½" wrenches, remove the (2) front hood fasteners and the (2) rear fasteners as shown in Fig 4.14.
2. Gently pull the hood up and forward to remove from the vehicle. Note the rear edge of the hood is attached to the dash portion with Hook and Loop attachment points.

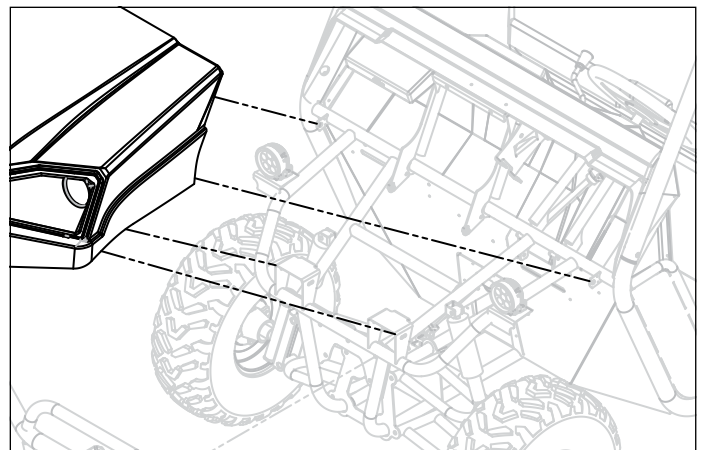


figure 4.14 (hood removal)

## WHEEL ALIGNMENT

### Front Wheel Alignment (Refer to figure 4.15)

The front wheels should be set with a “toe-in” from 1/4” to 3/8”. At the centerline of the tires, measure the Distance A and the Distance B. For proper toe adjustment, Dimension A should be 1/4” – 3/8” GREATER than Dimension B.

To make adjustments:

- Loosen the lock nuts on both sides of Front Tie Rods.
- Ensure the steering wheel is centered, and adjust Dimension B by equally rotating the tie rods in or out with a 12mm wrench.
- After adjusting to the desired length, tighten the lock nuts against the rod end.
- Recheck the dimensions for proper alignment.

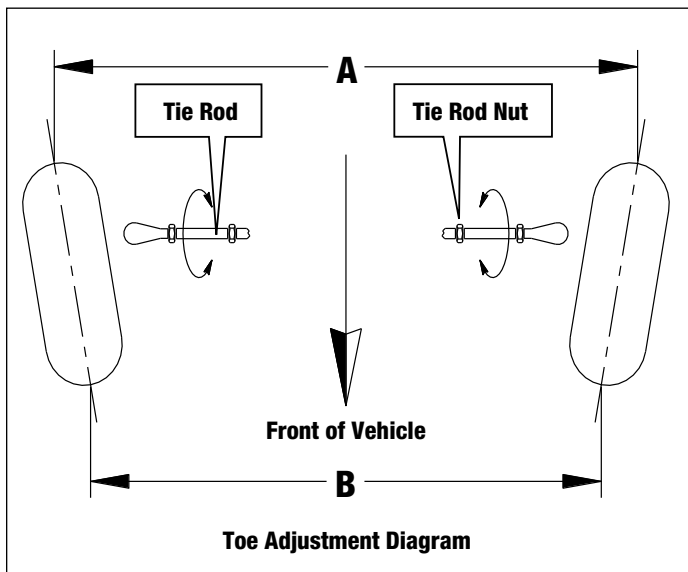


figure 4.15 (front wheel alignment)

## SHOCK ADJUSTMENT

### Adjustment of Front and Rear Shocks (Ref figure 4.16)

There are five adjustable positions on each shock. The center notch is the default position as set by the manufacturer. Use a round nut spanner wrench to adjust the shock. To **INCREASE** the shock stiffness, rotate the ring to the highest (longest) setting. To **DECREASE** the shock stiffness, rotate the ring to the lowest (shortest) setting.

Shock stiffness adjustments should be made based on the overall weight of the rider, occupant and cargo.

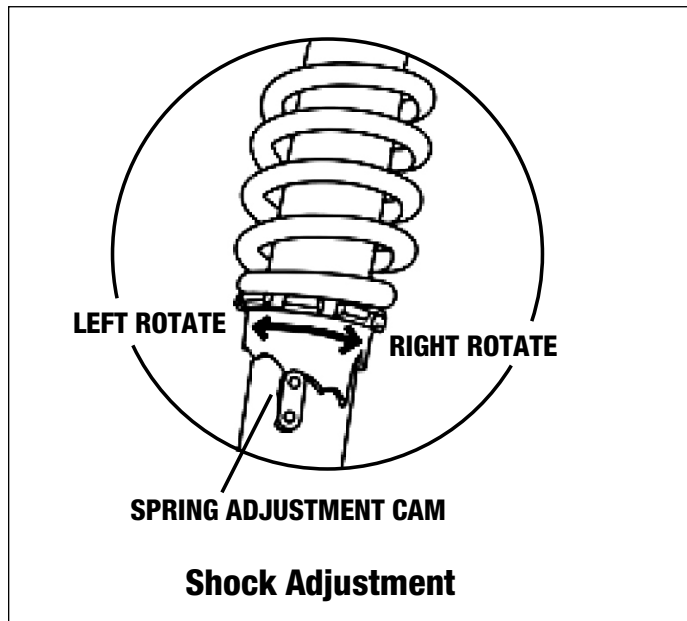


figure 4.16 (shock absorber adjustment)

## BRAKES, TIRES MAINTENANCE

### Tires

Check tire pressure before each use. Prior to operating the vehicle check and adjust tire pressure to the proper operating pressure as indicated on the sidewall of each tire or in the Specifications section of the Operator's Safety Manual. A “low pressure” tire gauge is required to obtain accurate readings.

Routinely inspect tires for damage, nails, unusual wear or excessive tread wear. NEVER operate a vehicle on bald or damaged tires, or when cording is exposed.

### Mechanical Brakes - 2WD (refer to figure 4.17)

This system is a cable operated mechanical drum brake setup. The primary adjustment is between the brake pedal and the cable connections. Removal of the center console is required (see page 29).

- Brake adjustment is achieved by loosening or tightening the cable tension on the brake rod.
- To adjust, loosen the clevis jam nuts and remove fastener from the either end of the brake rod.
- Change length of brake rod to loosen or tighten cables by threading clevis in or out accordingly.
- Re-attach clevis with fastener. **NOTE: This may require use of a pry bar to apply initial pressure to the cable assembly.**

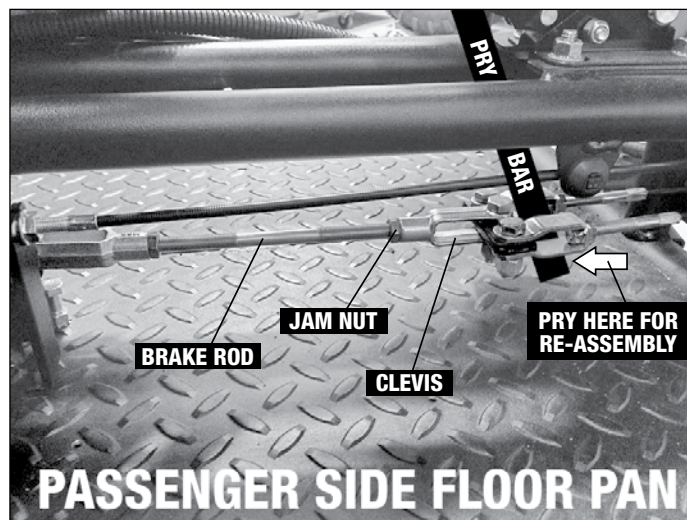


figure 4.17 (2WD brake adjustment)

## BRAKES, TIRES MAINTENANCE CONT.

### Hydraulic Brakes - 4WD (refer to figure 4.18)

Hydraulic Brakes use fluid pressure to transfer the braking force to the wheels. Before driving the vehicle each day, check the fluid level in the reservoir. The reservoir is located under the hood behind the front differential gear box. Fill to the MAX line with DOT 3 brake fluid. If you notice that the brake pedal feels spongy or the vehicle is not stopping well, take the vehicle to a qualified service center.

Authorized ASW service centers in your area can be found by visiting [www.americanlandmaster.com](http://www.americanlandmaster.com) or by calling customer service toll free at 800-643-7332

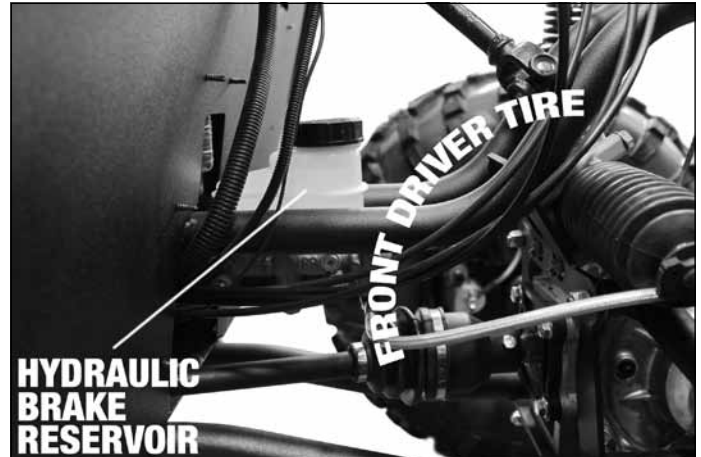


figure 4.18 (hydraulic brake reservoir location)

## VEHICLE CARE

### Fuel Hose

Inspect fuel hose monthly for cracks, leaks or other damage. Replace immediately if any damage is suspected.

### Cleaning the Windshield (if applicable)

- Rinse windshield with lukewarm water; wash gently with mild soap or detergent and lukewarm water, using a soft cloth or sponge. DO NOT SCRUB or use brushes or squeegees.
- Rinse again. Dry with soft cloth or moist cellulose sponge to prevent water spotting.
- Abusive cleaning procedures by hand washing or automated washing equipment will eventually result in visual hazing, loss of light transmission and coating contamination.

### Compatible Cleaning Agents

Aqueous Solutions (Mix With Water) of Soaps and Detergents

Fantastik, Formula 409, Hexcel, F.O. 554, Joy, Lysol, Mr. Clean, Neleco-Placer, Pine-Sol, Top Job, Windex.

### Washing your vehicle (ALL GAS MODELS)

See page 34.

### Headlight Adjustment / Replacement

The headlights on your vehicle are sealed LED lights and must be replaced if damaged as a complete assembly. Headlight adjustment is achieved by loosening the fasteners as shown in figure 4.19, adjusting and re-tightening.



figure 4.19 (headlight adjustment screw locations)

## TRANSPORTATION & STORAGE

If your vehicle is going to be trailered or in storage for an extended period of time, follow the instructions below for best results.

### MAINTAINING FUEL SYSTEM

Using a fuel stabilizer/conditioner in the vehicle can provide benefits such as:

- Keeps gasoline fresh during storage of 90 days or less. For longer storage, drain the fuel tank.
- Cleans the engine during operation.
- Eliminates gum-like varnish build-up in the fuel system.

Add the correct amount of fuel stabilizer/conditioner to the gas. Follow the fuel stabilizer/conditioner manufacturer's directions for best results.

### Engine Fuel Valves (Ref to figures 4.20, 4.21 & 4.22)

American Landmaster recommends closing the fuel valve whenever the unit is trailered to avoid fuel flooding.

On single cylinder models the engine has a fuel valve that opens and closes the passage between the fuel tank and carburetor. Leave fuel valve lever in the OFF position when the engine is not in use to prevent carburetor flooding and reduce possibility of fuel leakage into the cylinder cavity and engine oil reservoir. Turn fuel valve lever to the ON position when running the engine.

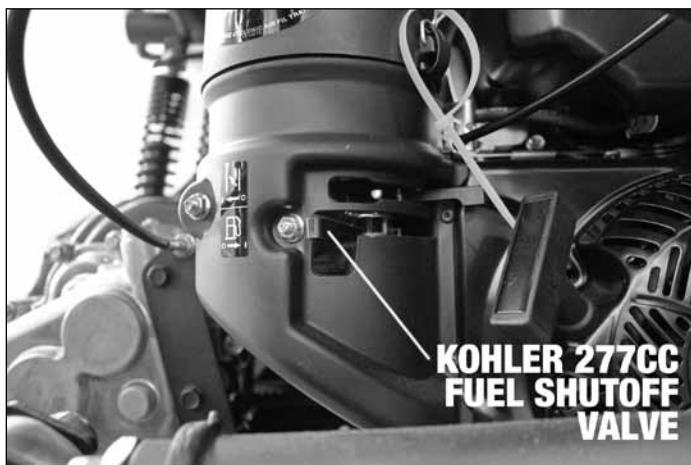


figure 4.20 (engine fuel shutoff valve located on 277cc Kohler)



figure 4.21 (engine fuel shutoff valve located on 390cc Honda)

### Inline fuel valves

On V-Twin models, an in-line fuel shut-off is standard and located on the fuel line between the fuel tank and the engine as shown in figure 4.22.

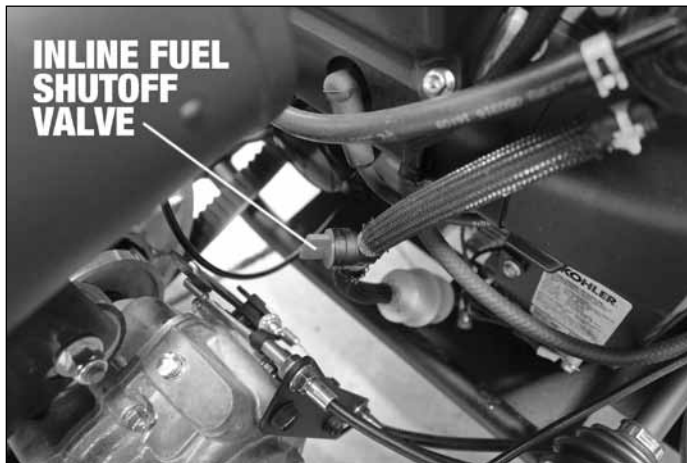


figure 4.22 (inline fuel shutoff valve - shown on a 674cc Kohler in the "ON" position)

### LONG TERM STORAGE

If you plan to store (and not operate) your vehicle for a period in excess of 30 days, or at the end of each driving season, the unit should be set up for storage as follows:

- Drain fuel tank and carburetor by allowing the engine to run completely out of fuel.
- Lubricate the engine cylinder by removing the air cleaner and spraying an engine fogging oil through the carburetor.
- Do NOT save or store gasoline over the winter. Using old gasoline, which will deteriorate from storage, will make the engine difficult to start and affect the performance of the engine.
- Remove the battery from the unit and apply a periodic trickle charge to maintain the battery at a proper voltage level for the next riding season.
- To protect the paint, plastics and upholstery, we recommend covering the unit when not in use.

## BATTERY & ELECTRICAL

### Battery Charging - Gas Models

Use a trickle charger to maintain battery voltage as needed.

### Battery Charging - 48V Models (Refer to Figure 4.23)

- A charging port is located on the seat surround below the driver side of the bench seat. Use an AWG 12 gauge cord to charge.
- The charger will come on and begin to charge on its own.
- A fully discharged battery set will take 9-12 hours to fully recharge.

### Battery Watering

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. Trojan (the battery manufacturer) 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 distilled or deionized water only.

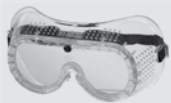
### WARNING

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

### Step by step watering procedure:

### WARNING

**REMEMBER: Always wear a safety shield or approved safety goggles when adding water or charging batteries.**



- a. Open the vent caps and look inside the fill wells.
- b. Check electrolyte level; the minimum level is at the top of the plates.
- c. If necessary add just enough water to cover the plates at this time.
- d. Put batteries on a complete charge before adding any additional water (refer to the Charging section).
- e. Once charging is completed, open the vent caps and look inside the fill wells.
- f. Add water until the electrolyte level is 1/8" below the bottom of the fill well.
- g. A piece of rubber can be used safely as a dipstick to help determine this level.
- h. Clean, replace, and tighten all vent caps.



figure 4.23 (battery charging port)

### WARNING

**NEVER jump the battery with an automotive battery**

### Battery Disposal

Lead-acid batteries are completely recyclable. Return whole scrap battery to distributor, manufacturer or lead smelter for recycling. For information on returning batteries to Trojan Battery Company for recycling call 800-423-6569. For neutralized spills, place residue in acid-resistant containers with sorbent 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.

## FUSES

### Fuse Locations (Refer to figures 4.24, 4.25 & 4.26)

Your 48V Vehicle has fused protection for the main motor circuit, along with the low amperage 48 volt circuit, and the 12 volt circuit. Shown in figure 4.23 (next page) is the 500 amp main fuse. This fuse will blow in the event of a short across the battery posts, or a catastrophic failure in the motor or controller. Should this fuse blow, it must be replaced with a like 500 amp fuse. These fuses are available through your dealer.

### Fuse Replacement

Your unit is equipped with fuses to protect the electrical system from excessive load conditions. Units are equipped with 20 amp fuses located just forward of the engine.

Replace fuses by opening the sealed fuse holder. Remove fuses and replace. Close the fuse holder. Fuse replacement is part number 2-70029.

## BATTERY & ELECTRICAL CONT.

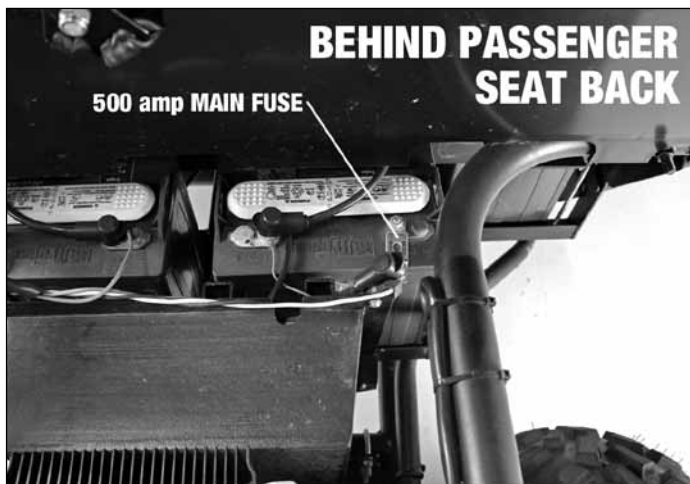


figure 4.24 (battery charger)



figure 4.25 (25 amp fuse)



### NOTE

ALL MODELS

#### FUSES:

- In addition to the main fuse, there are three smaller fuses to protect the 12 volt and 48 volt circuits. These fuses are shown in figures 4.25 & 4.26. Should these fuses blow and need replacement, a replacement fuse of the same rating must be used.



### CAUTION

48V MODELS



#### ACCESSORY WIRING

Accessories must NOT be grounded to chassis. Damage to converter will occur. Ground to distribution block ground (neg) terminal only (see wiring diagram for proper distribution block location)

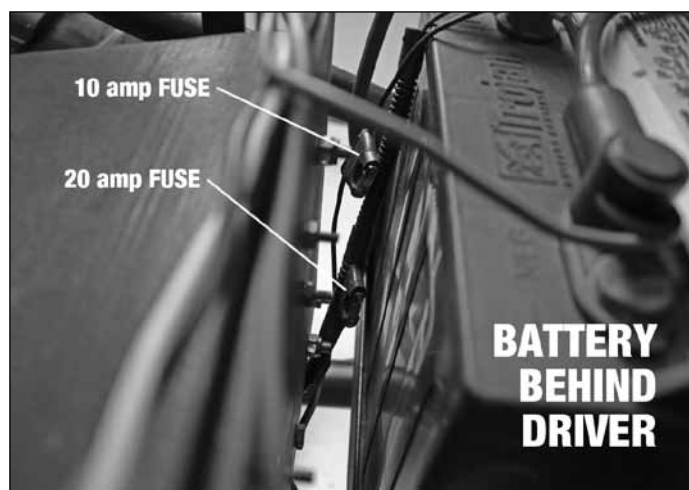


figure 4.26 (10 amp & 20 amp fuses)

### Washing your vehicle (ALL GAS MODELS)

It is acceptable to wash your utility vehicle, though a pressure washer should not be used, and common sense should be exercised. The air intake system should be protected during washing by placing a plastic bag or other protection over the top of it and securing underneath prior to washing as shown figure 4.27. Avoid direct water or spray contact with wiring harness, system components, or any electrical component especially if the vehicle is equipped with EFI. Remember that the electronics of a fuel injection system are sensitive to water and corrosion.



### CAUTION

Washing or operating the vehicle in freezing temperatures can result in water freezing in the throttle cable conduit, the throttle, and/or the engine's throttle mechanism.

- This may result in the throttle sticking which can cause the engine to continue to run and result in loss of control.

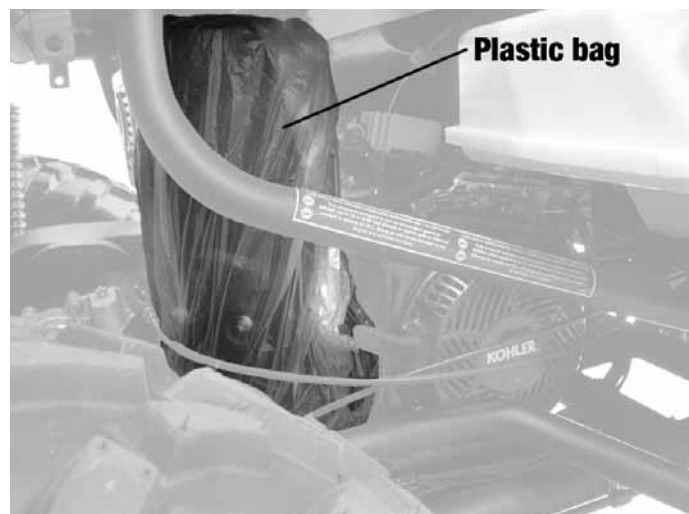


figure 4.27 (protecting the air intake)

# section 5 troubleshooting

SYMPTOMS	PROBABLE CAUSES	SUGGESTED REMEDIES
<b>DEAD BATTERY</b>	Key switch left on	Turn key off, recharge battery
	Bad battery	Replace battery
	Shorted starter solenoid	Replace starter solenoid
<b>BATTERY WON'T CHARGE</b>	Loose or corroded battery connection	Clean and tighten connections
	Defective voltage regulator	Contact local service center
	Dead battery cell	Turn key on and pull rope to start engine (if equipped). Replace battery as soon as possible
	Worn out or defective battery	Turn key on and pull rope to start engine (if equipped). Replace battery as soon as possible
	Bad magneto on engine	Contact engine manufacturer service center
<b>ELECTRICAL SYSTEM NOT WORKING</b>	Blown or missing fuse	Replace fuse
	Loose or corroded battery connection	Clean and tighten connections
	Worn out or defective battery	Replace battery
	Defective ignition switch	Replace ignition switch
	Bad connection in wire harness	Repair or replace wire harness
<b>ENGINE BACKFIRES</b>	Fouled sparkplug	Replace or clean sparkplug
	Missing or incorrectly installed air intake restrictor	Replace or correctly install air intake restrictor
	Throttle cable is defective or out of adjustment	Clean and lubricate or replace cable
<b>ENGINE KNOCKS</b>	Engine idle speed too low	Adjust engine idle (see engine manual)
	Overloaded engine	Avoid overloading engine
	Stale or dirty fuel	Replace fuel with new fuel
<b>ENGINE SHUTS DOWN WHILE TURNING, ON INCLINES, OR ON UNEVEN TERRAIN</b>	Low engine oil	Check oil level with unit on level ground
	Oil sensor is bad (if equipped)	Get low oil sensor changed by authorized engine manufacturer service center
<b>STEERING FEELS FUNNY / PULLING TO ONE SIDE / HARD TO STEER (CALL NORMALLY FOR 4WD)</b>	One side may still be engaged in 4WD with the switch off	Put unit in reverse and back up straight a few feet to get the axle to release
	One side may still be engaged in 4WD with the switch off	Take unit to a service center
	Low tire pressure	Inflate tires to proper levels (12 p.s.i. recommended for full size UTVs)
<b>BRAKES DONT WORK WELL / HARD TO PUSH / NO TRAVEL IN PEDAL</b>	Brake rotors are dirty	<b>4WD</b> Clean rotors with brake cleaner and test.
	Brakes are out of adjustment	<b>2WD</b> Put unit in reverse, back up at low speed and step hard on the brake (2WD units have an auto brake adjuster)
<b>BELT SLIPPING / WILL NOT PULL UPHILL</b>	Too much weight - bed / cab / towing	Lighten load
	The belt is wet	Dry the belt
	Torque converter pulleys are dirty	Clean the torque converter
	Belt may have stretched or have a low spot causing slipping	Replace the belt

## Fuel in the Cylinder Cavity (applies only to single cylinder engines)

In the event that the fuel valve is left open while transporting or towing this Utility Vehicle it is possible that fuel has leaked down into the cylinder cavity. If this has occurred the engine will not start. With the cylinder cavity full of fuel the engine will feel like it has "locked up". At right are the proper steps to follow if your Utility Vehicle engine seems to have fuel in the cylinder cavity.

### WARNING

**Use EXTREME CAUTION when performing the activity below. Gasoline is EXTREMELY FLAMABLE!**

1. Move the vehicle to a well ventilated area, away from sparks or flame.
2. Park Vehicle on a level surface, set park brake, turn off ignition switch, and remove key.
3. Remove the wire connected to the spark plug and remove the spark plug from the engine. (See figure 5.1)
4. **WARNING:** Stand away from the spark plug hole when performing step 5. Fuel can spray several feet.
5. Wearing eye protection, slowly pull the recoil start grip handle (See figure 5.xx) in an upward motion. This should force the fuel out of the cylinder cavity through the spark plug hole. **Caution: This gasoline spraying out of the cylinder cavity is very flammable, use extreme caution and make sure there are no sparks or flames nearby.**
6. Repeat step 3 until only air escapes out of the spark plug hole.
7. Properly replace the spark plug back into the cylinder head, move the vehicle away from any spilled fuel. If there is fuel on the vehicle itself, allow for it to evaporate before continuing.
8. Connect the plug wire. Your Utility Vehicle is now ready to start.

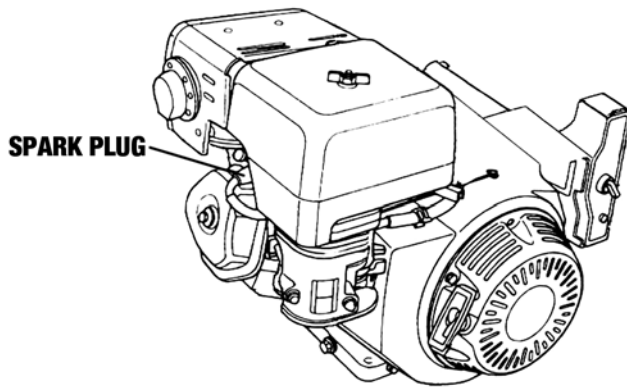


figure 5.1 (spark plug location)

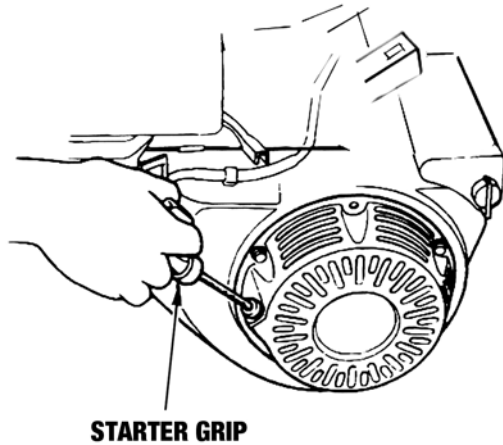


figure 5.2 (recoil starter grip)

### Utility Vehicle Shifter Trouble Shooting

Notice: Always check transmission oil level. Dip a clean screwdriver straight down in the fill hole to the bottom of the gear case. There should be about 2 ½ inches of oil on the screw driver. If oil needs to be added, use SAE 30 motor oil. See page 24 for instructions

- **Engine will not turn over when key is turned to start.**
  - This vehicle is equipped with a safety switch that only allows starting in neutral.

Go to **Neutral switch diagnostic procedure** below.

- **Gears grind when going into a gear or vehicle stays in gear when shifted to neutral.**
  - Engine idle is too high.
  - Cables need to be lubricated or adjusted.

Go to **Cable adjustment procedure** at right.

### Neutral Switch Diagnostic Procedure

If starter does not engage when shift lever is in neutral:

1. Apply the parking brake.
2. Turn and hold the key to start. – cycle the shift lever in and out of gear several times. If the starter engages, release the key and call American LandMaster Customer service to order a neutral switch shim kit.
3. If the starter did not engage in step 2, turn and hold the key to start – slowly move the shift lever from neutral to reverse – if the starter engages, release the key. Repeat, moving the shift lever from neutral to forward.

- If the starter did engage, go to **Cable adjustment procedure** section.
- If the starter did not engage call Customer Service at 800-643-7332.

### Cable Adjustment Procedure

Dry cables can cause shifting problems and may affect starting since the vehicle must go to neutral to start. Before attempting to adjust the cables there are several steps that can be taken to ensure the cables are operating properly.

- Lubricate the cables. Remove the hood per the instructions on page 29. Behind the dash there are two cables attached to the gear selector lever. Slide the rubber dust caps up the cable. Drip or spray penetrating oil into the cable housing while working the lever. Do this several times as the oil soaks into the housing. Test the vehicle.
1. Put the vehicle in neutral.
  2. Loosen the cable adjusters behind the dash board. (figure 5.3)
  3. Make sure the selector lever on the dashboard is in neutral.
  4. Make sure the transmission is in neutral. You can check by turning the key to Start. The engine will only turn over if the transmission is in neutral.
  5. Pull the slack out of both cables (but do not stretch the springs) and tighten the adjuster nuts or you can also use the adjuster nuts on the cable bracket located on the transmission. (figure 5.4)

If you have tried all of this and it is still not operating correctly, you may need new cables. Please call American LandMaster Customer Service at 1-800-643-7332. Have your serial number when you call.

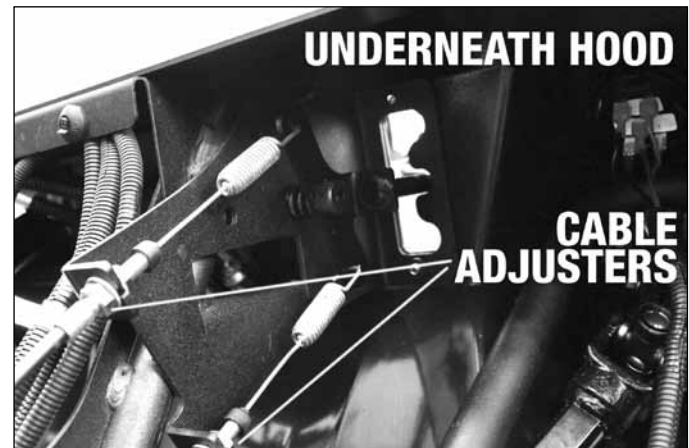
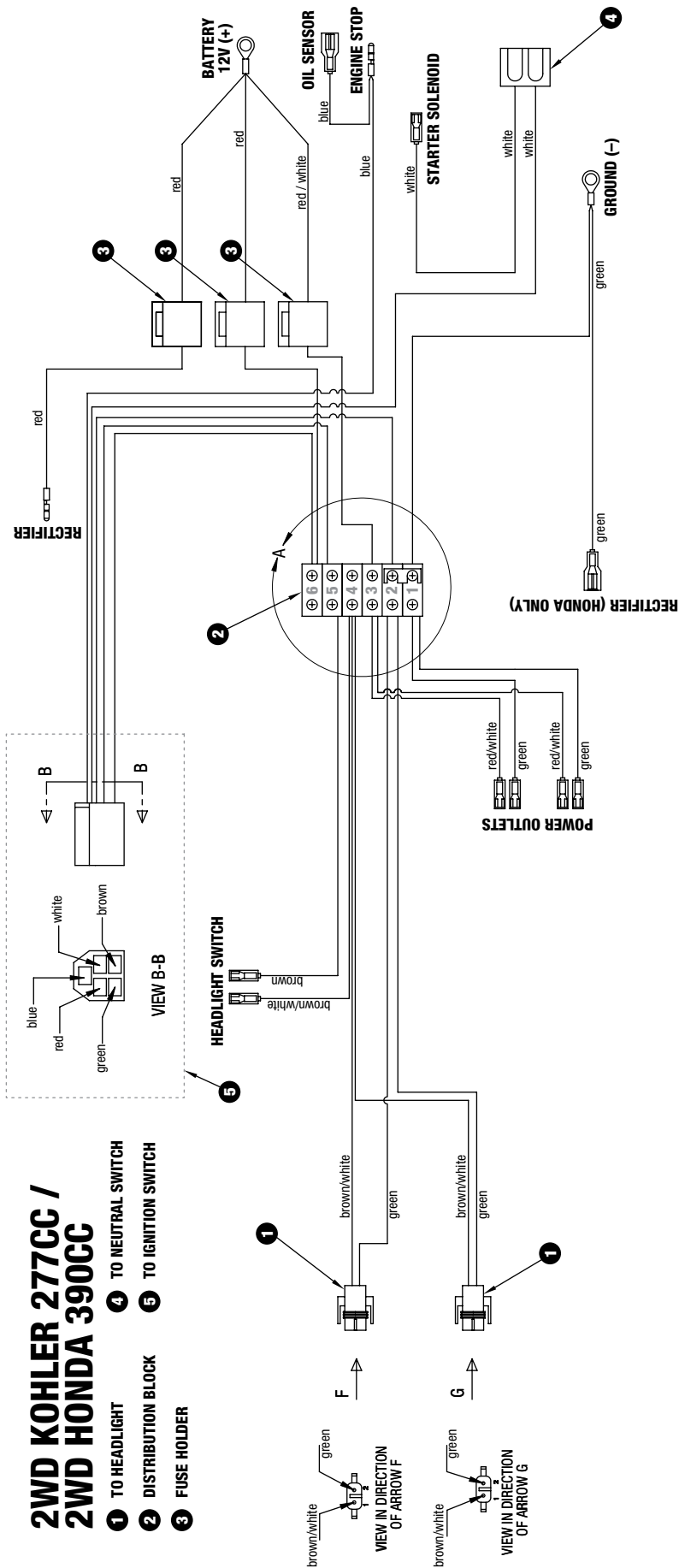


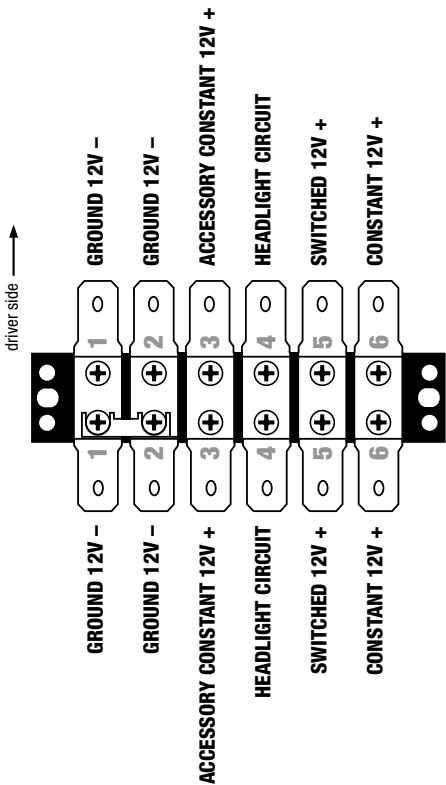
figure 5.3



figure 5.4

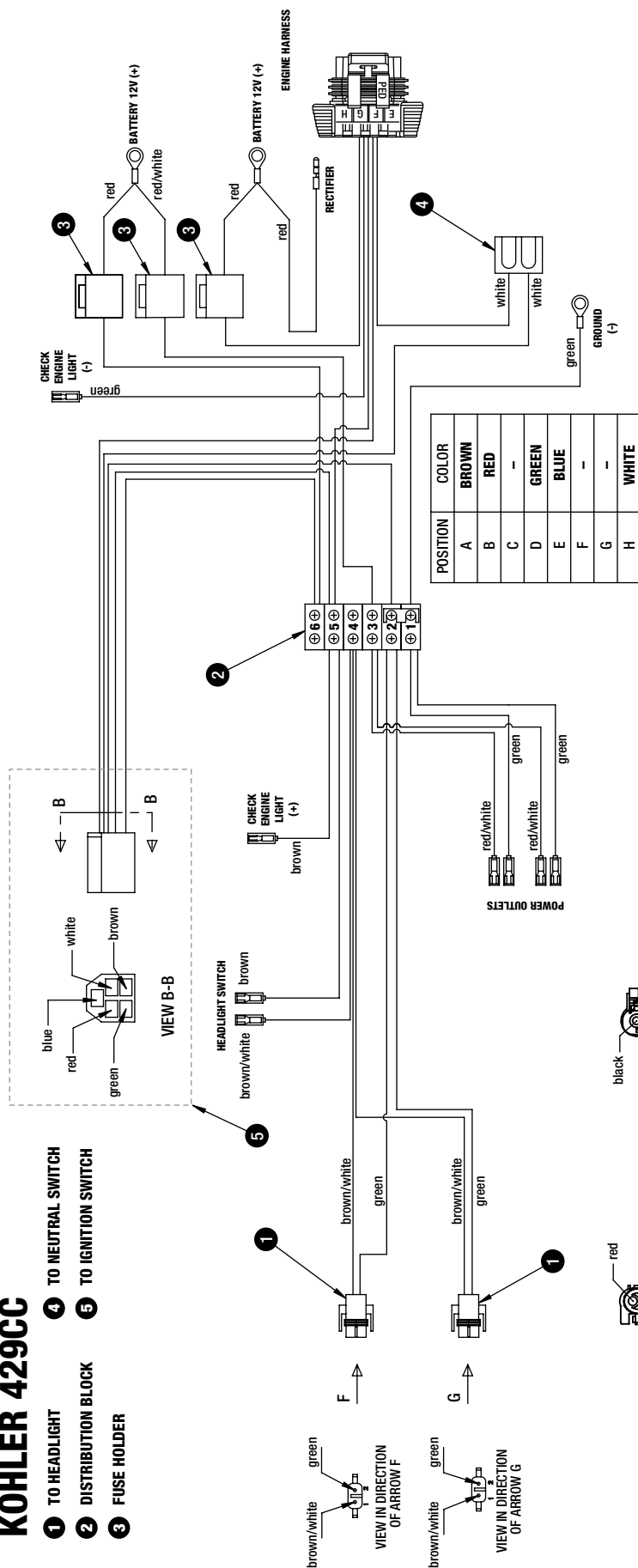


**TERMINAL BLOCK ORIENTATION BENEATH HOOD**

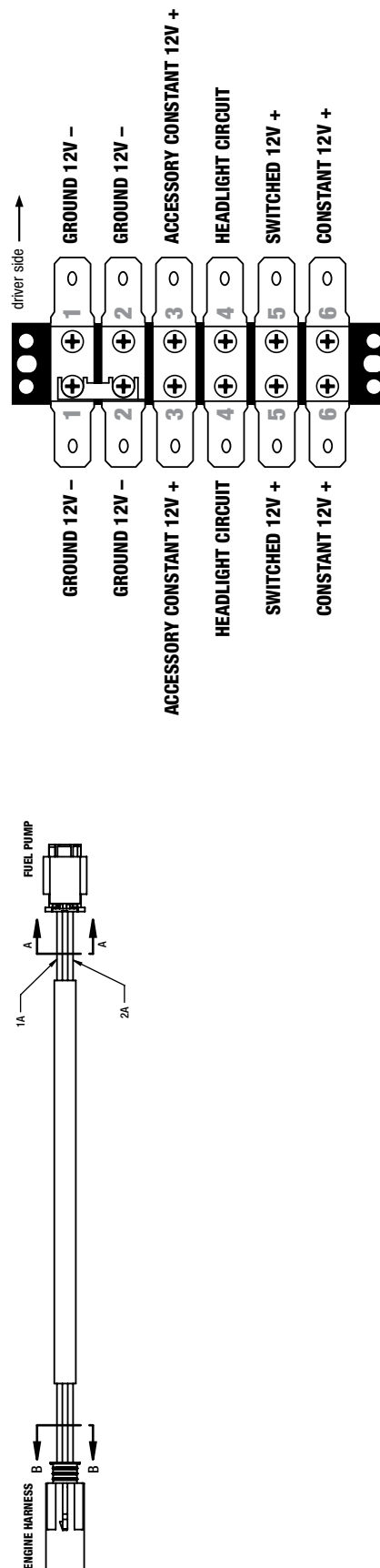


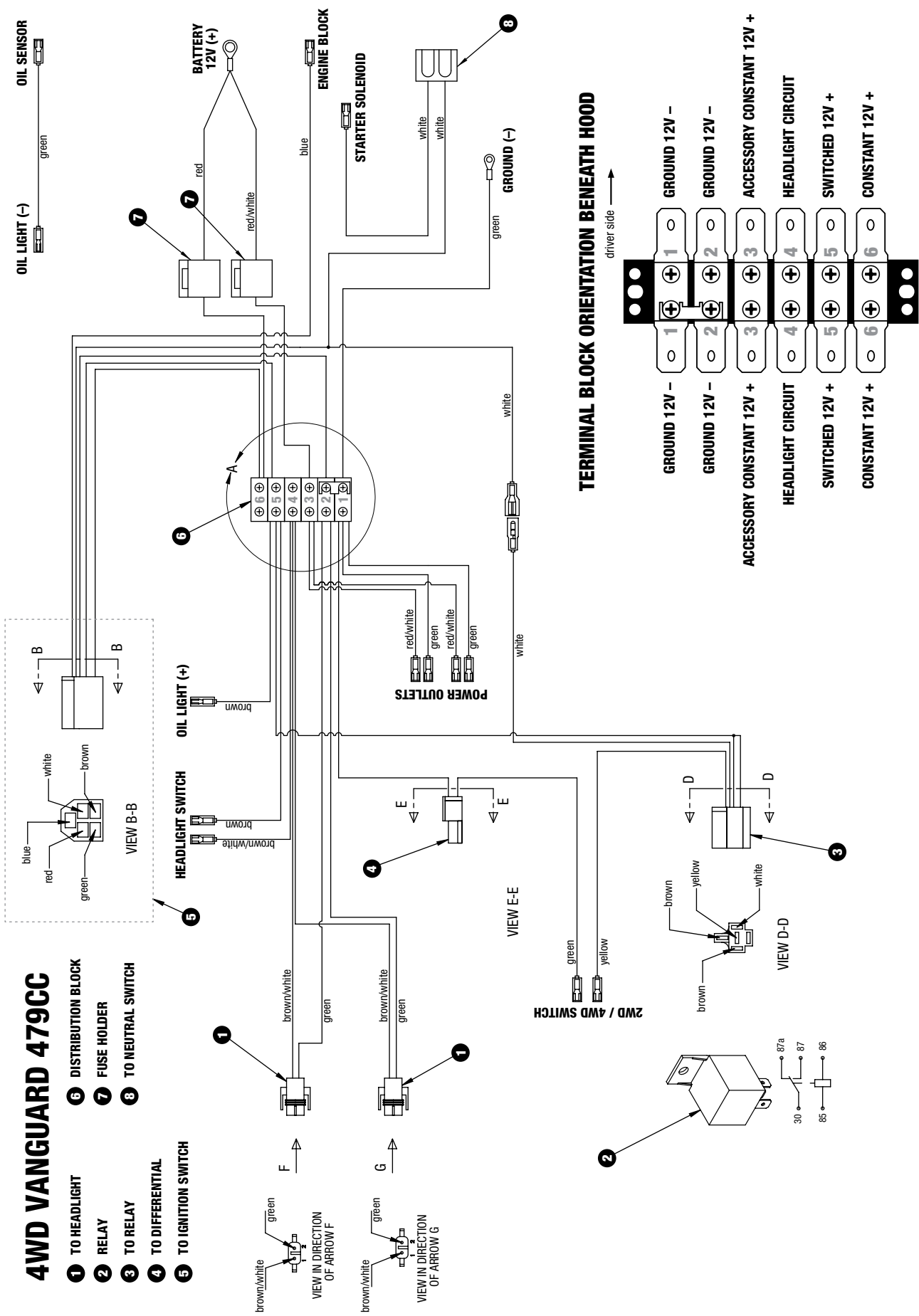
# KOHLER 429CC

- 1** TO HEADLIGHT
- 2** DISTRIBUTION BLOCK
- 3** FUSE HOLDER
- 4** TO NEUTRAL SWITCH
- 5** TO IGNITION SWITCH



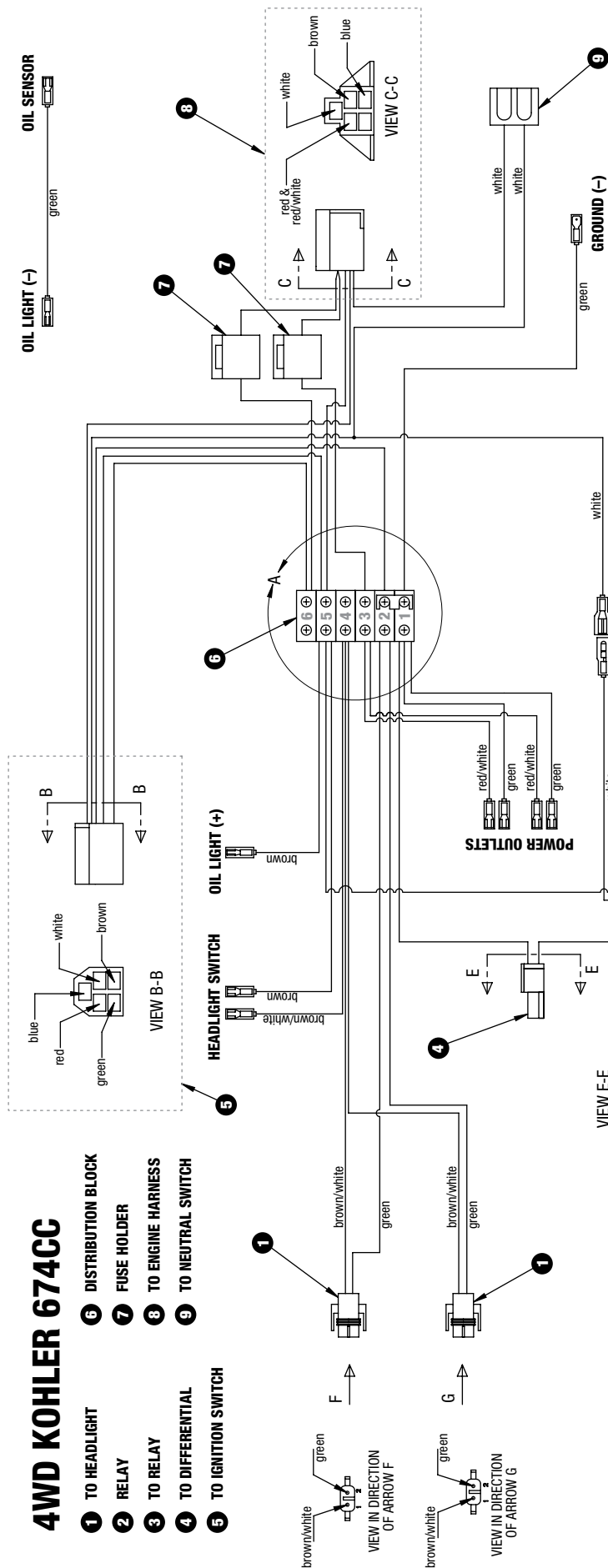
## TERMINAL BLOCK ORIENTATION BENEATH HOOD



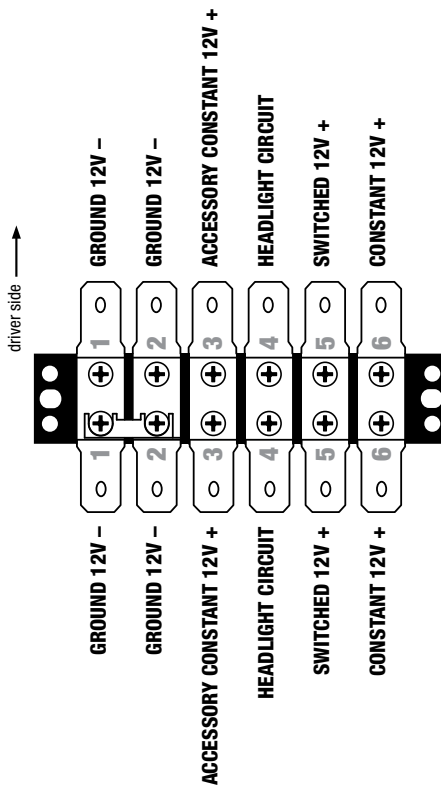


## 4WD KOHLER 674CC

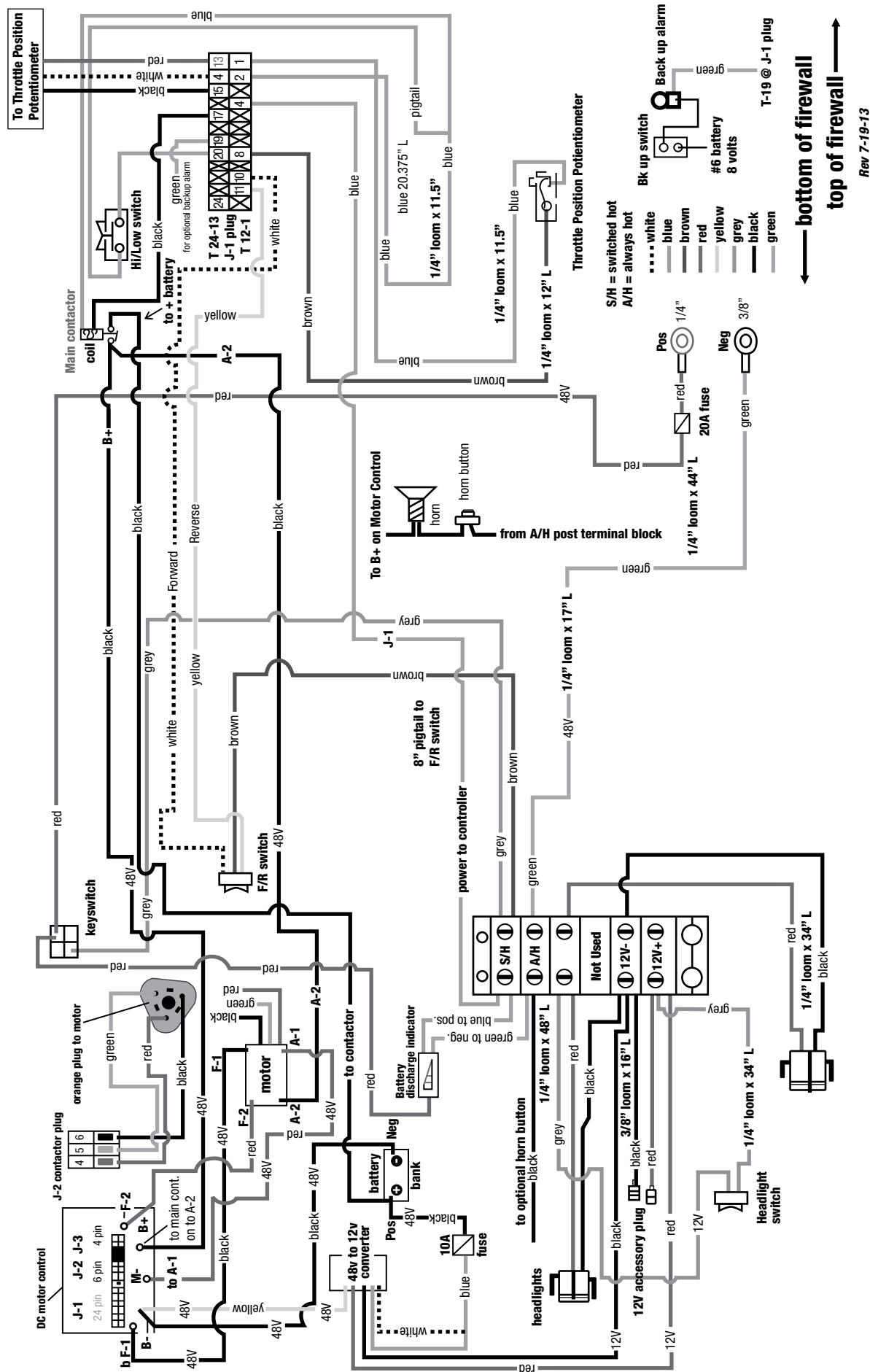
- 1 TO HEADLIGHT
- 2 RELAY
- 3 TO ENGINE HARNESS
- 4 TO DIFFERENTIAL
- 5 TO NEUTRAL SWITCH
- 6 DISTRIBUTION BLOCK
- 7 FUSE HOLDER
- 8 TO RELAY
- 9 TO IGNITION SWITCH



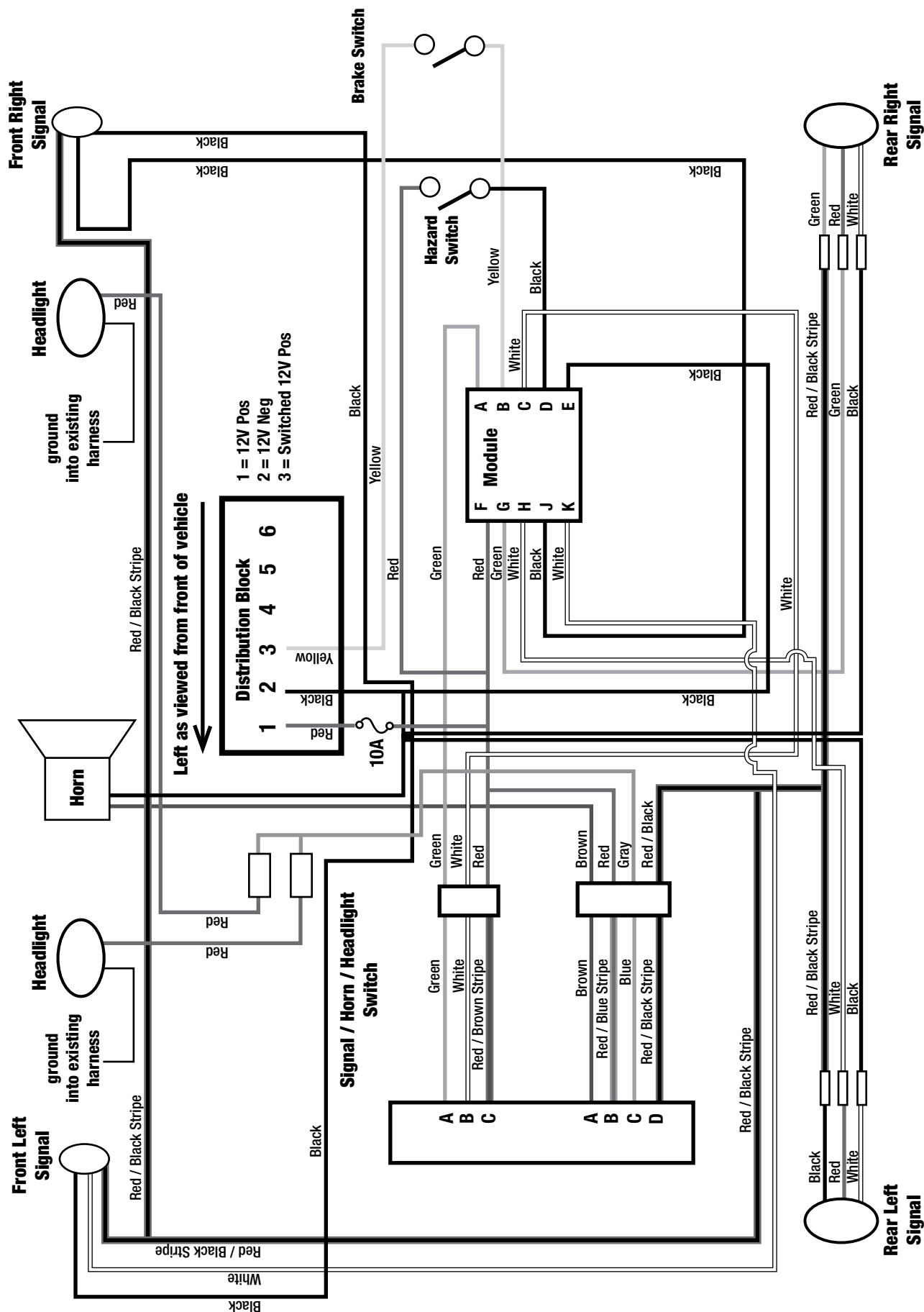
### TERMINAL BLOCK ORIENTATION BENEATH HOOD



# 48 VOLT ELECTRIC



# 48 VOLT ELECTRIC WIRING HARNESS



# SPECIFICATIONS

350 specifications			450 specifications (Honda and Kohler versions)		550 specifications
POWER	277cc LandMAXX Commercial Power Engine by Kohler 4-Stroke OHV single cylinder with low oil shutdown		390cc LandMAXX by Honda 4-stroke OHV single cylinder / 429cc LandMAXX by Kohler fuel injected 4-stroke OHV single cyl.		479cc VANGUARD 350 Series 4-stroke pressure lubricated OHV V-Twin with oil pressure warning light
SPEED	Up to 22 mph*		Up to 22 mph*		Up to 24 mph*
FUEL CONSUMPTION	Up to 32 mpg*		Up to 20 mpg*		Up to 18 mpg*
RANGE	Up to 100 miles*		Up to 100 miles*		Up to 90 miles*
STARTING	12V keyed ignition with recoil backup		12V keyed ignition with recoil backup		12V keyed ignition with recoil backup
BATTERY	12V / 360 cca utility class		12V / 360 cca utility class		12V / 360 cca utility class
SPARK PLUG	NGK BKR5E		<b>HONDA UNITS:</b> NGK BPR6ES <b>KOHLER UNITS:</b> NGK 2382		NGK C7HSA
FUEL CAPACITY	5.0 gal		5.0 gal		5.0 gal
ALTERNATOR	10 amp		<b>HONDA UNITS:</b> 10 amp <b>KOHLER UNITS:</b> 18 amp		16 amp
TRANSMISSION	CVT automatic		CVT automatic		CVT automatic
TRANSAXLE	Gear drive Schafer/DANA oil-filled transaxle		Gear drive Schafer/DANA oil-filled transaxle		Gear drive Schafer/DANA oil-filled transaxle
DIFFERENTIAL	Open		Locking		Locking
DRIVE	2 wheel drive		2 wheel drive		Switch engaged on demand, 4 wheel drive
FRONT SUSPENSION	Double A-arms, adjustable shocks with 3" travel		Double A-arms, adjustable shocks with 3" travel		Double A-arms, adjustable shocks with 3" travel
REAR SUSPENSION	Articulated rear swing arm, featuring twin adjustable shocks with 3" travel		Articulated rear swing arm, featuring twin adjustable shocks with 3" travel		Articulated rear swing arm featuring twin adjustable shocks with up to 3" Travel
BRAKE SYSTEM	6.25" dual rear drum with hand operated parking brake		6.25" dual rear drum with hand operated parking brake		Hydraulic disc front, hydraulic drum rear with hand operated parking brake
TIRES	22 x 9 - 10 (front) 22 x 11 - 10 (rear) Recommended pressure is 12p.s.i.		25 x 11 - 12 (front & rear) Recommended pressure is 12p.s.i.		25 x 11 - 12 (front & rear) Recommended pressure is 12p.s.i.
DIMENSIONS	107.5" L x 48" W x 76" H		107.5" L x 48" W x 78" D		107.5" L x 48" W x 78" D
WHEEL BASE	72.5"		72.5"		72.5"
TURNING RADIUS	7.5' inside radius		7.5' inside radius		9.5' inside radius
DRY WEIGHT	824 lbs.		824 lbs.		1000 lbs.
SHIPPING WEIGHT	1041 lbs.		1041 lbs.		1185 lbs.
BED MATERIAL	Structural foam "Poly Bed" with stake pockets		Structural foam "Poly Bed" with stake pockets		Structural foam "Poly Bed" with stake pockets
BED DIMENSIONS	35.25" L x 41.5" W x 11" D		35.25" L x 41.5" W x 11" D		35.25" L x 41.5" W x 11" D
BED CAPACITY	9.25 cu.ft. / 400 lbs.		9.25 cu.ft. / 400 lbs.		9.25 cu.ft. / 500 lbs.
REAR FLIP SEAT	Available when ordered as "S" model		Available when ordered as "S" model		Available when ordered as "S" model
TOWING CAPACITY	1100 lbs.		1100 lbs.		1200 lbs.
VEHICLE CAPACITY	900 lbs.		900 lbs.		1000 lbs.
WARRANTY	3 year engine / All other 1 year limited		3 year engine / All other 1 year limited ( <b>HONDA or KOHLER</b> )		2 year engine / All other 1 year limited

\* Estimates. Actual top speeds, fuel consumptions and vehicle ranges may vary due to driving conditions, terrain, climate and other extenuating circumstances.

# SPECIFICATIONS

670 / 750 specifications			C2 / C4 specifications		48V specifications	
POWER	674cc LandMAXX Commercial Power Engine by Kohler Command Pro® CH640 rated at 20.5hp 4-stroke OHV V-twin with oil pressure warning light	674cc LandMAXX Commercial Power Engine by Kohler Command Pro® CH640 rated at 20.5hp 4-stroke OHV V-twin with oil pressure warning light	674cc LandMAXX Commercial Power Engine by Kohler Command Pro® CH640 rated at 20.5hp 4-stroke OHV V-twin with oil pressure warning light	48V DC 24kw at 70 ft. lbs of torque with 500 amp Curtis controller fed by six 8 volt Trojan T-875 deep cycle batteries		
SPEED	Up to 24 mph*	Up to 24 mph*	Up to 24 mph*	Up to 22 mph (Up to 10 mph in M2 mode)*		
FUEL CONSUMPTION	Up to 18 mpg*	Up to 18 mpg*	Up to 18 mpg*	Up to 38 miles (in M2 mode)*		
RANGE	Up to 90 miles*	Up to 90 miles*	Up to 90 miles*	N/A		
STARTING	12V keyed ignition	12V keyed ignition	12V keyed ignition	Keyed on/off switch		
BATTERY	12V / 360 cca utility class	12V / 360 cca utility class	12V / 360 cca utility class	N/A		
SPARK PLUG	NGK BPR4ES	NGK BPR4ES	NGK BPR4ES	N/A		
FUEL CAPACITY	5.0 gal	5.0 gal	5.0 gal	N/A		
ALTERNATOR	25 amp	25 amp	25 amp	Converter/20 amps		
TRANSMISSION	CVT automatic	CVT automatic	CVT automatic	Direct drive		
TRANSAXLE	Gear drive Schaefer/DANA oil-filled transaxle	Gear drive Schaefer/DANA oil-filled transaxle	Gear drive Schaefer/DANA oil-filled transaxle	H-12 Schaefer/DANA gearbox		
DIFFERENTIAL	670: Locking / 750: Hilliard auto locking	670: Locking / 750: Hilliard auto locking	670: Locking / 750: Hilliard auto locking	Open		
DRIVE	Switch engaged on demand, 4 wheel drive	Switch engaged on demand, 4 wheel drive	Switch engaged on demand, 4 wheel drive	2 wheel drive		
FRONT SUSPENSION	Double A-arms, adjustable shocks with 3" travel	Double A-arms, adjustable shocks with 3" travel	Double A-arms, adjustable shocks with 3" travel	Double A-arms, adjustable shocks with 3" travel		
REAR SUSPENSION	670: Articulated rear swing arm, featuring twin adjustable shocks with 3" travel / 750: double A-arm fully independent with up to 5" travel	670: Articulated rear swing arm, featuring twin adjustable shocks with 3" travel / 750: double A-arm fully independent with up to 5" travel	Articulated rear swing arm, featuring quad adjustable shocks with 3" travel	Articulated rear swing arm, featuring quad adjustable shocks with 3" travel		
BRAKE SYSTEM	Hydraulic disc front / hydraulic drum rear with hand operated parking brake	Hydraulic disc front / hydraulic drum rear with hand operated parking brake	Hydraulic disc front / hydraulic drum rear with hand operated parking brake	6.25" dual rear drum with regenerative braking / hand operated parking brake		
TIRES	25 x 11 - 12 (front & rear) Recommended pressure is 12p.s.i.	25 x 11 - 12 (front & rear) Recommended pressure is 12p.s.i.	25 x 11 - 12 (front & rear) Recommended pressure is 12p.s.i.	22 x 11 - 10 (front & rear) Terra Trac Recommended pressure is 12p.s.i.		
DIMENSIONS	107.5" L x 48" W x 78" D	143" L x 48" W x 75" H	143" L x 48" W x 75" H	106" x 47" x 74"		
WHEEL BASE	72.5"	104"	104"	71"		
TURNING RADIUS	9.5" inside radius	12.25" inside radius	12.25" inside radius	7.5" inside radius		
DRY WEIGHT	1000 lbs.	LSC2: 1200 lbs. / LSC4: 1254 lbs.	LSC2: 1200 lbs. / LSC4: 1254 lbs.	1250 lbs.		
SHIPPING WEIGHT	1185 lbs.	LSC2: 1200 lbs. (ships uncrated) / LSC4: 1254 lbs.	LSC2: 1200 lbs. (ships uncrated) / LSC4: 1254 lbs.	1360 lbs.		
BED MATERIAL	Structural foam "Poly Bed" with stake pockets	Structural foam "Poly Bed" with stake pockets	Structural foam "Poly Bed" with stake pockets	Structural foam "Poly Bed" with stake pockets		
BED DIMENSIONS	35.25" L x 41.5" W x 11" D	35.25" L x 41.5" W x 11" D	35.25" L x 41.5" W x 11" D	35.25" L x 41.5" W x 11" D		
BED CAPACITY	9.25 cu.ft. / 500 lbs.	9.25 cu.ft. / 400 lbs.	9.25 cu.ft. / 400 lbs.	9.25 cu.ft. / 400 lbs.		
REAR FLIP SEAT	Available when ordered as "S" model	Available when ordered as "S" model	Available when ordered as "S" model	Available when ordered as "S" model		
TOWING CAPACITY	1200 lbs.	1200 lbs.	1200 lbs.	1100 lbs.		
VEHICLE CAPACITY	1000 lbs.	1500 lbs.	1500 lbs.	900 lbs.		
WARRANTY	3 year engine / All other 1 year limited	3 year engine / All other 1 year limited	3 year engine / All other 1 year limited	1 year limited		

\* Estimates. Actual top speeds, fuel consumptions and vehicle ranges may vary due to driving conditions, terrain, climate and other extenuating circumstances.

# limited warranty

## Utility Vehicle / Light Utility Vehicle

**Limited Warranty:** American LandMaster (hereinafter referred to as “ALM”), hereby warrants to the original purchaser, that your new ALM UTV/LUTV will be free from defects in material and workmanship for a period of one (1) year from date of purchase, except as provided below. Certain engines may carry an engine manufacturer’s warranty which is longer than one (1) year. These engines are not covered by this ALM warranty. Please refer to the engine manufacturer’s warranty policy included with your ALM product for its warranty repair requirements and procedures.

**ALM Warranty Responsibilities:** ALM, if notified of a defect in material or workmanship during the period of warranty, will repair or replace, at its option, defective parts covered by this warranty at no charge, other than the reasonable cost for the transportation of the component(s). ALM will also agree to pay reasonable charges for labor, if necessary, to perform a warranty repair.

**Warranty Claim Requirements and Procedures:** In order to be able to claim under this warranty the original purchaser must maintain and operate the vehicle in accordance with the instructions provided in the Operator’s Manual, engine manual, the supplements thereto, and labels affixed to the vehicle. Additionally, within (10) days of the discovery of an alleged defect, the original purchaser must contact ALM’s Customer Service Department at 1-800-643-7332, 7625 DiSalle Boulevard, Fort Wayne, IN 46825 or via the internet at [www.americanlandmaster.com](http://www.americanlandmaster.com). The repair or replacement of any part or parts under this Limited Warranty shall not extend the term of the warranty beyond the original term as set forth above.

**General Exclusions:** This limited warranty does not cover component failure or damage caused by any of the following: abnormal strain or stress, neglect; abuse; improper assembly of components which were supplied in the factory sealed carton after the vehicle left ALM; improper maintenance, modifications, damage caused by use of non ALM accessories, improper use of the vehicle, including, but not limited to racing, jumping, stunt driving, or any other uses prohibited by the Operator’s Manual. Additionally, this warranty does not cover vehicles which are leased, rented, or used at a concession track.

**Specific Exclusions:** This limited warranty does not apply to components which are subject to normal wear and tear. These items include, but are not limited to, the tires, battery, brakes, throttle, shift and brake cables, drive belt, the torque converter system, chain, seat, lights, fasteners, decals, or body panels and natural cosmetic discoloration of material due to ultraviolet light. Downtime, pick-up and delivery charges are not covered by this warranty. This warranty does not apply to select engines which are covered by a separate manufacturer’s warranty.

**NO IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY:** THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. SPECIFICALLY, ALM MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED. ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED THE OBLIGATIONS AND TIME LIMITATIONS SPECIFIED IN THE WARRANTY ABOVE ARE HEREBY DISCLAIMED BY ALM AND EXCLUDED FROM THIS WARRANTY. ADDITIONALLY, THIS WARRANTY EXCLUDES ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOSS OF USE. SOME STATES DO NOT ALLOW A MANUFACTURER TO EXCLUDE OR LIMIT INCIDENTAL OR CONSEQUENTIAL DAMAGES AND, THEREFORE, THE ABOVE EXCLUSION MAY NOT APPLY TO YOU.

SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY WILL LAST. IT IS POSSIBLE THAT THE ABOVE LIMITATION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER LEGAL RIGHTS, WHICH VARY, FROM STATE TO STATE.

**Warranty Service:** To obtain warranty service you must return your ALM product to the local authorized dealer or service center, inform them of your warranty problem and provide proof of purchase before any warranty service can be provided. The authorized dealer or service center will inspect the product to determine what repairs or parts are needed and whether they are covered under this warranty. To locate the authorized dealer or service center nearest you please call ALM customer service at 800-643-7332, or visit our website at [www.americanlandmaster.com](http://www.americanlandmaster.com) for more information.

**EPA Requirements:** This product complies with all applicable EPA Emissions and, Evaporative requirements. Included with your product’s documents are copies of ALM’s “Emission Control System Warranty Statement”. If your vehicle has a fuel tank mounted remotely from the engine, you will be provided with an “Evaporative Emissions Warranty Statement”.

## Service and Warranty Special Note

Should your American LandMaster product require warranty repair, service or if you have any questions concerning assembly, replacement parts or how to care for your product please contact your local American LandMaster dealer or American LandMaster directly.

### **American LandMaster Dealers:**

To locate the authorized dealer nearest you please call American LandMaster customer service at 1-800-643-7332, visit our website at [www.americanlandmaster.com](http://www.americanlandmaster.com) or contact your place of purchase.

### **Mail:**

Customer Support  
c/o American LandMaster  
2499 S 600 E, suite 102  
Columbia City, IN 46725

### **Telephone:**

Customer Support  
American LandMaster  
1-800-643-7332

### **Fax:**

Customer Support  
American LandMaster  
1-800-399-1399

### **e-mail:**

Customer Support  
American LandMaster  
[feedback@americanlandmaster.com](mailto:feedback@americanlandmaster.com)



## UTILITY VEHICLE SET-UP / PRE DELIVERY CHECKLIST

MODEL #	SERIAL #	DATE OF PURCHASE
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### DEALER SET-UP

- |   |   |
|---|---|
| <input type="checkbox"/> <b>VISUALLY</b> - inspect for damage                 | <input type="checkbox"/> <b>MANUALS</b> - operators safety manual / engine manual |
| <input type="checkbox"/> <b>FASTENERS</b> - inspect for missing bolts, nuts   | <input type="checkbox"/> <b>WELDS</b> - inspect for missing                       |
| <input type="checkbox"/> <b>CHECK ORDER</b> - verify all items are as ordered | <input type="checkbox"/> <b>CLEAN UP</b> - check clean up of unit                 |
| <input type="checkbox"/> <b>LOOSE COMPONENTS</b> - verify all are there       | <input type="checkbox"/> <b>DECALS</b> - inspect for missing decals               |

**SET UP BY:**

**DATE:**

### PRE DELIVERY

- |   |  |
|---|--|
| <input type="checkbox"/> <b>TIRES</b> - adjust pressure to proper specification   | <input type="checkbox"/> <b>BATTERY</b> - insure that it is fully charged        |
| <input type="checkbox"/> <b>WHEELS</b> - check lug and axle nut for proper torque | <input type="checkbox"/> <b>KEYS</b> - verify operations of key switch           |
| <input type="checkbox"/> <b>CAGE</b> - check to insure cage is assembled properly | <input type="checkbox"/> <b>LIGHTS</b> - verify proper operation of all lights   |
| <input type="checkbox"/> <b>FASTENERS</b> - check all fasteners for proper torque | <input type="checkbox"/> <b>AXLE</b> - inspect attachment and wheel bearings     |
| <input type="checkbox"/> <b>TRANSAXLE</b> - insure oil level is correct           | <input type="checkbox"/> <b>ENGINE</b> - check engine RPM's for settings         |
| <input type="checkbox"/> <b>PARKING BRAKE</b> - insure that working correctly     | <input type="checkbox"/> <b>SEAT RESTRAINTS</b> - insure installed properly      |
| <input type="checkbox"/> <b>DUMP BED</b> - insure latch is adjusted properly      | <input type="checkbox"/> <b>SEATS</b> - insure seat is installed properly        |
| <input type="checkbox"/> <b>SHIFT LEVER</b> - insure working properly             | <input type="checkbox"/> <b>GUARDS</b> - inspect for missing bolts, nuts, guards |
| <input type="checkbox"/> <b>BRAKE</b> - insure brake is adjusted and working      | <input type="checkbox"/> <b>THROTTLE</b> - insure throttle is working properly   |
| <input type="checkbox"/> <b>OIL</b> - insure that engine oil level is correct     |  |

**CHECKED BY:**

**DATE:**

### DEALER INFORMATION

NAME

PHONE

ADDRESS

FAX

CITY, STATE, ZIP

EMAIL

### CUSTOMER CHECKLIST

- |   |   |
|---|---|
| <input type="checkbox"/> <b>VISUAL INSPECTION</b>             | <input type="checkbox"/> <b>MY DEALER DEMONSTRATED ALL CONTROLS</b>                   |
| <input type="checkbox"/> <b>RECEIVED SERVICE INSTRUCTIONS</b> | <input type="checkbox"/> <b>RECEIVED KEYS &amp; ENGINE MANUAL</b>                     |
| <input type="checkbox"/> <b>SHOWN ALL ENGINE CONTROLS</b>     | <input type="checkbox"/> I have reviewed and understand the warranty policy           |
| <input type="checkbox"/> <b>WARRANTY EXPLAINED FULLY</b>      | <input type="checkbox"/> I have visually inspected unit and found no defects          |
| <input type="checkbox"/> <b>RECEIVED OWNERS MANUAL</b>        | <input type="checkbox"/> I understand this vehicle product is not designed for racing |

- ☐ I understand that this product is designed for off road use only and is NOT intended for use on public roads or highways unless equipped with an LSV package.\*

- ☐ I understand that before operating this vehicle all operators and passengers must read, follow and understand all safe operating instructions

\* American LandMaster Low Speed Vehicle (LSV) models are street legal where allowed when properly licensed and plated. No ALM vehicles are designed for, nor allowed on highways. Check local ordinances regarding the use of Low Speed Vehicles in your area.

11/07/2017

# PRE DRIVE INSPECTION CHECKLIST

ITEM	INSPECTION PROCEDURE	ACTION
<b>Engine Oil Level</b>	Add oil if required. Check for leaks. Tighten filler cap securely.	Refer to operator's or engine manual.
<b>Fuel Level</b>	Add fuel if necessary. DO NOT overfill. DO NOT mix oil with gas. Replace cap tightly.	Refer to operator's or engine manual. DO NOT refuel a hot engine. Allow engine to cool before adding fuel.
<b>Warning Decals</b>	Make sure all warning decals are legible and securely attached.	Replace as necessary.
<b>Tires</b>	Tread must have a minimum height of 1/8" at center of tire. Prior to operating vehicle, check and adjust tire pressure as indicated on the sidewall of each tire, or in the vehicle manual (we recommend 12 p.s.i. for full size UTVs). A tire pressure gauge is required to obtain accurate readings.	Replace tires if tread height is less than 1/8" at center of tire. Add or remove air as necessary to meet requirements indicated on sidewall of each tire or in the specifications section of the vehicle manual (12 p.s.i. recommended for full size UTVs).
<b>Drive Train</b>	Check condition and fluid levels	Lubricate, adjust as necessary.
<b>Throttle</b>	Check for smooth operation. Ensure throttle 'snaps' back to idle. Check for frayed or loose cable. Check for mud, debris, and ice in throttle mechanism Check idle adjustment	Replace damaged cable. Clean out any mud and debris. If ice is present, move vehicle to a warm place and allow the ice to melt and water to dry. Adjust as necessary
<b>Fasteners</b>	Check wheels to see that all wheel nuts are tightened securely at 65 ft. Lbs. Check for missing fasteners. Check that all other fasteners are secure.	Tighten fasteners as necessary. Replace fasteners as necessary.
<b>Brush Bars</b>	Make sure all brush bars are in place and securely attached.	Replace damaged bars or fasteners and tighten as necessary.
<b>Steering</b>	Make sure steering turns freely. Check for proper 'toe-in' of wheels.	Lubricate and adjust as necessary.
<b>Frame / Chassis</b>	Check for bent or otherwise damaged frame and/or other chassis components.	Replace as necessary.
<b>Guards</b>	Check all guards covering moving parts.	Tighten fasteners on loose guards. Replace worn or damaged guards.
<b>Lights</b>	Check for proper operation	See OPERATION section of the Operator's Safety Manual
<b>Suspension and Ball Joints</b>	Check for ball looseness	Replace as necessary
<b>Keyswitch</b>	Perform switch test and ensure that engine shuts off when key is turned to the "OFF" position.	Repair / replace as necessary
<b>Brakes</b>	Ensure brakes function properly.	Adjust / replace as necessary
<b>Shields</b>	Check all shields	Tighten fasteners on loose shields. Replace damaged shields.