

# Avenger AVX4

## Owner's Manual



**Manufactured by:**



**Remote Access  
Vehicles Corp.**

6769 W. Hwy 77  
Pence, WI 54550

**Congratulations on the purchase of your new AVENGER AVX4 ATV (Avenger).**

**We at Remote Access Vehicles, Corp. (RAVCO) are sure that you and your family and friends will have many years of enjoyment with this vehicle.**

**We have designed this manual to assist in the operation and maintenance of your new AVENGER. We urge you to read it carefully and follow the recommendations contained within to ensure that your new ATV operates effectively.**

#### **OWNERSHIP INFORMATION**

**Your new AVENGER is provided with a Vehicle Identification Number (VIN) and an engine number. The VIN is located on the inside right quarter panel of your AVENGER.**

#### **DISCLAIMER**

**RAVCO's policy is one of continuous improvement. We reserve the right to discontinue or change specifications, models, equipment, or prices without notice and without incurring obligation. This also applies to local assembly or manufacture areas where local content requirements may affect standard or optional specifications.**

## Warranty

In the event that you experience a problem with your Avenger due to a defect in material or workmanship within the normal warranty period, we suggest that you contact the dealer from whom you purchased your machine for warranty repairs. If for any reason the selling dealer cannot repair your machine, then any authorized Avenger dealer can complete warranty service as required.

General maintenance items not covered by warranty are outlined as follows:

1. Variable speed drive belts.
2. Damage to vehicle due to collision.
3. Complete assemblies are not replaced, only individual parts.
4. Additional service work requested exceeding that which is necessary to satisfy the warranty obligations.
5. Transportation charges and/or travel time to and from another servicing point. Delivery must be made to an authorized Avenger dealer for service.
6. Parts or labor required to remedy trouble caused by neglect, normal wear, improper lubrication or when abuse or misuse is evident. The warranty covers defective workmanship and material only.
7. Traveling time or mileage, telephone calls, taxi or towing charges.
8. Rental of a vehicle during period when warranty repairs are being completed.

All warranty parts for repairs are limited to the warranty terms expressed in the "Statement of Warranty" on the back cover of this manual.

## Ignition Switch

The keyed switch on the dash controls all electrical functions of your Avenger. The "off" position grounds the ignition circuit and stops the motor. On electric start models, turning the key to the extreme right "start" position will energize the starter motor. The key switch is spring-loaded in the "start" position and will return to the "on" position when released.

**CAUTION: DO NOT OPERATE THE ELECTRIC STARTER MOTOR MORE THAN 10 SECONDS WITHOUT ALLOWING 10 SECOND INTERVALS FOR COOLING. OPERATING THE ELECTRIC STARTER BEYOND THESE LIMITATIONS CAN CAUSE A PREMATURE FAILURE OF THE STARTER OR RING GEAR WHICH IS NOT COVERED BY WARRANTY.**

## Choke

This is a push-pull control located on the dashboard. The choke should be used only to start cold engines. Let the engine turn over until it starts or attempts to start (no longer than 10 seconds) with throttle in the idle position. If engine attempts to start but stops, it may be over-choked. Hold throttle open and push choke in. Turn engine over until it starts (10 second intervals).

**CAUTION: OVERCRANKING OF ENGINE WITH CHOKE ON WILL FLOOD ENGINE; SPARK PLUG REMOVAL AND CLEANING MAY BE NECESSARY TO START ENGINE.**

## Throttle

The throttle (hand-operated) is located on the right steering lever. You increase the engine speed by slowly squeezing the throttle towards the rubber handgrip. The engine will return to "idle" when you release the pressure.

**CAUTION: IF THE ENGINE DOES NOT RETURN TO "IDLE," CHECK THE THROTTLE CABLE ALONG ITS ENTIRE LENGTH FOR RESTRICTION, BENDS, KINKS, OR MALFUNCTIONS.**

## Steering and Braking

You steer and brake the Avenger with the two levers projecting vertically from the floor pan. The left-hand lever actuates the power to and braking of the two wheels on the left-hand side of the vehicle. The right-hand lever actuates power to and braking of the right-hand wheels. Pulling a control lever back activates the internal disc brake on the side, thus disengaging the power and locking the wheels.

**CAUTION: HIGH-PERFORMANCE DRIVING (i.e. INTRICATE MANEUVERS INVOLVING MAXIMUM ACCELERATION, SHARP TURNS, AND NAVIGATING DIFFICULT TERRAIN AND OBSTACLES) SHOULD NOT BE ATTEMPTED UNTIL YOU ARE THOROUGHLY FAMILIAR WITH THE OPERATING PROCEDURES AND CHARACTERISTICS OF THE VEHICLE.**

## Manual Starting

The manual starter handle is located on the right side of the engine. This starter is an automatic rewind type and will provide many hours of trouble-free service by observing the proper operating technique as follows:

1. Place gear shift lever in the neutral position.
2. Choke engine if cold.

**CAUTION: BE SURE THROTTLE AND BRAKE CONTROLS OPERATE FREELY AND AREA IN FRONT OF MACHINE IS CLEAR BEFORE STARTING ENGINE.**

3. Grasp manual starting handle firmly and pull slowly until engagement of ratchet mechanism can be felt, then continue to pull outward with a full, vigorous stroke. Do not release handle at end of stroke and allow cable to snap back. Retain grip on handle and allow cable to rewind slowly. Do not pull rope to end of travel. If engine does not start immediately, allow engine to come to a complete stop before engaging starter again.
4. If choke is used, return to "off position immediately when engine starts. If engine falters, use choke intermittently until the engine runs smooth.

**CAUTION: DO NOT USE OR OPERATE THE AUTOMATIC REWIND STARTER WHILE THE ENGINE IS RUNNING, OR DAMAGE MAY OCCUR TO THE REWIND STARTER ASSEMBLY.**

## Electric Starting

1. Place gear shift lever in the neutral position.
2. Choke engine if cold

**CAUTION: BE SURE THROTTLE AND BRAKE CONTROLS OPERATE FREELY AND AREA IN FRONT OF MACHINE IS CLEAR BEFORE STARTING ENGINE.**

3. Turn key to "start" position to activate electric starter. If choke is used, do not apply throttle. If engine is warm and choke is not used, apply partial throttle.
4. When engine starts, release key, which automatically will return to "on" position and return the choke lever to "normal running" position. If engine falters, actuate choke. Do not use choke when starting a warm engine, or carburetor flooding may occur.

**IMPORTANT: The starter motor is not designed for continuous operation, and serious damage may result if operated continuously (maximum of 10-second operating intervals with a 10-second cooling period).**

**CAUTION: ALWAYS LET ENGINE STOP BEFORE ENGAGING STARTER OR DAMAGE TO STARTER PINION OR RING-GEAR WILL RESULT.**

## **Breaking in your machine**

You break in your Avenger much like you would a new car. This break in period is 8 to 10 operating hours. During this time you should not use full-power operate with the throttle from V2 to 3/4 opened. Use the break in period to familiarize yourself with the controls and the operating characteristics of your Avenger and to make any minor adjustments that may be necessary.

## **Storage**

When the Avenger is stored, take the following steps to protect it:

1. Siphon fuel from the tank.
2. Remove torque converter belt.
3. Start and run engine until it stops to remove excess fuel from carburetor.
4. Remove battery and store.
5. Lubricate primary chains with chain lubricant
6. Lubricate belt sheave on driven converter to prevent rusting.
7. Cover machine and store in a dry place to prevent rusting.

## **Driving Recommendations and Precautions**

1. Some states have regulations concerning the operation of off-highway vehicles. Check with responsible officials before operating your Avenger on public lands, parks, forests, game preserves, etc.
2. Familiarize yourself with all the controls. Do not attempt high-performance driving until you have spent at least 10 to 12 hours orienting yourself with the controls.
3. Use caution when traversing steep hills. Drive with the slope and not cross-hill, using steady power. When coming down a steep slope, maintain a slight but steady pressure on the throttle; engine compression will assist your descent. Use only a light braking action for steering.
4. Respect private property and right-of-way. Do not ride on public roads or highways. **REMEMBER**, your Avenger is an off-highway vehicle and hence you are not protected by normal traffic regulations or "rules of the road." Use extreme caution when encountering regular vehicular traffic.
5. Be alert for hidden drainage ditches or wire fences when you're crossing open fields. Don't overdrive: vehicle speed should be in proportion to the amount of unobstructed terrain that you see ahead.
6. Approach drainage ditches, culverts, or other obstacles with caution; ease your Avenger over these slowly.
7. Passengers should be carried only in the front seat; never allow anyone to ride in the area behind the seat.
8. When carrying cargo, be sure to keep the motor air exhaust ports free of obstruction.
9. When operating your Avenger in water, be sure the load is balanced and that you don't overload the vehicle. Use good boating practices and be sure the drain plug is secure.
10. When leaving water, approach shore line at right angles so that both front tires grip at the same time.

11. Use extra care and refrain from high-performance driving when you're carrying passengers, especially children. Stunts or excessive speed could result in injury.

12. Do not attempt high-performance maneuvers when you're in crowds. The torque generated by your Avenger can cause tires to "throw" rocks and other debris that may cause injury.

13. Be sure floor pan and seat are securely anchored. Never attempt to operate the vehicle unless this assembly is in place.

14. Before loaning your Avenger to anyone, give them a "check ride," make sure they are thoroughly familiar with the controls and the operating characteristics of the vehicle.

15. Don't leave the key in the ignition switch. This is an open invitation for unauthorized use of your Avenger.

16. Do not attempt to adjust or repair your Avenger with the motor running.

17. Cover your Avenger when not in use to protect the drive mechanism and other parts from water, dirt, and debris.

**CAUTION: COVER THROTTLE LEVER TO KEEP WATER OUT.**

#### **IMPORTANT STEERING TECHNIQUES**

In order to obtain a smooth steering technique you must follow the techniques listed below:

1. The Avenger's levers are spring-loaded toward the forward position. Gently accelerate. Allow the machine to travel forward approx. 24" before starting a turn.

2. In order to turn right, pull back on the right lever while accelerating; the more acceleration the sharper and faster the turn. Pulling harder on the right lever will NOT increase the rate of turn once the right wheels have been stopped.

3. In order to turn left the above procedure should be reversed.

4. In order to apply brakes to all four wheels gently pull both levers back at the same time and discontinue acceleration.

#### **Brake Adjustment (Figure 1)**

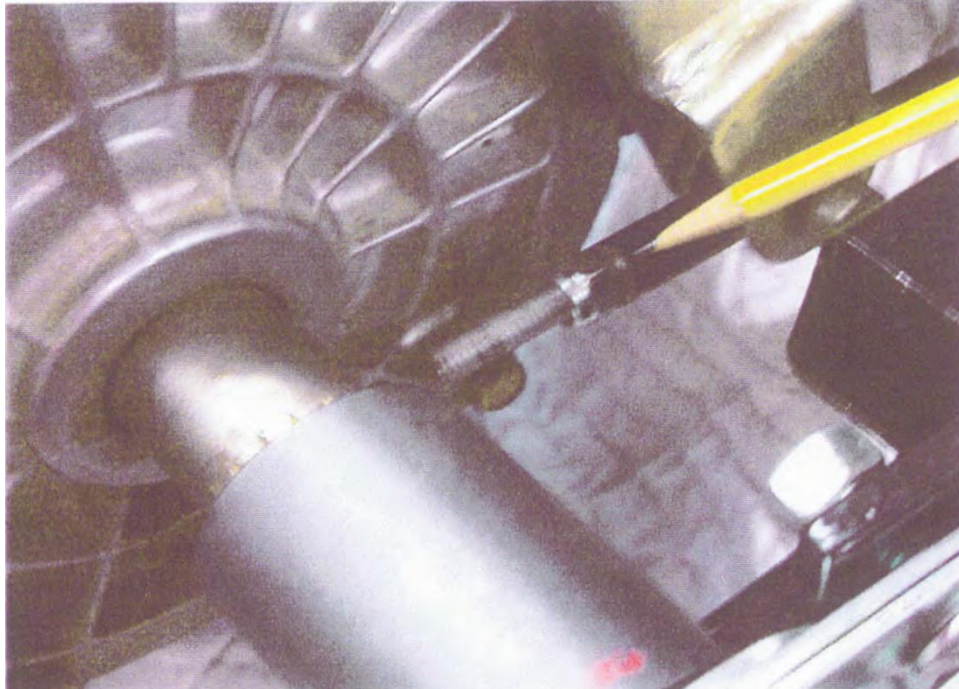
If excessive travel in the steering levers is noted on your machine an adjustment of the brakes may be necessary. In order to accomplish this you must:

1. Make sure machine has been turned off and the key removed from the switch.

2. Remove the rear cargo screen by removing the two 5/16" wing nuts.

3. Tighten nut shown in Figure 1 as necessary.

**CAUTION:** There should always be a minimum of 1/16" gap between the nylon lock nut and the bushing.



**Figure 1**

#### **Drive-Train Maintenance**

The drive belt is an essential part of the drive mechanism and it is recommended that a spare belt be carried at all times. Frequent inspection of the belt is recommended and if the belt is severely worn replace the belt.

#### **Torque Converter**

The torque converter does not require any maintenance other than periodic lubrication of the shafts upon which the movable sheaves slide. Use a small amount of graphite-base, low-temperature lubricant. Excessive lubrication of the torque converter could cause belt slippage from "thrown off" lubricant.

#### **Drive Chain Tension**

The normal amount of free play in the drive chains is one-half inch up or down from the center line measured at the center point between the sprockets. To adjust: Pull idler up and tighten bolt. Check chain tension for the "YZ" up and down free play.

#### **Battery**

The battery is a 12-volt, dry-charge unit with spill proof vents for Avenger all-terrain vehicles. It has a 32 ampere-hour rating. All lead acid batteries have an inherent self-discharge characteristic when not in use. Recharge every 45 days or when specific gravity drops below 1.230. Before charging, remove battery caps, cover plates with distilled water, but not over ¼" above. Charge rate should not be more than 5-10 amperes. Discontinue charging when specific gravity reaches 1.270.

Store battery as follows:

1. Remove battery and remove all grease, sulfate and dirt from top surface by sprinkling with baking soda and flushing with water.

2. Remove battery caps and cover plates with distilled water, but not over ¼" above plate separators.
3. Lubricate terminal bolts well with cup grease.
4. With battery in a full-charge condition (specific gravity 1.260-1.275), store in a cool, dry place where temperature will not fall below freezing.
5. Remove battery from storage every 45 days. Check acid level and put on charger for five to six hours at two amperes. DO NOT FAST CHARGE.
6. When ready to place battery back into service, remove excess grease from terminals (leaving a small amount on), recharge as necessary and reinstall in your Avenger.

**CAUTION: DO NOT ALLOW FLAME OR SPARKS NEAR BATTERY DUE TO DANGER OF EXPLOSION. DO NOT CROSS POLARITY, OR RECTIFIER WILL BE DAMAGED.**

### Maintenance Chart

Maintenance Requirement	Time Interval
Dealer 5-10 hour first inspection	After 5-10 hours of operation
Tire Inflation	Before each use
Check drive chain tension	Every 10 hours of operation
Check battery acid level	Every 10 hours of operation
Tighten wheel nuts	Every 10 hours of operation
Check brake and adjust	Every 25 hours of operation
Clean or replace fuel filter	Every 25 hours of operation
Clean or replace carburetor air filter	Every 25 hours of operation

Lubrication Required	Time Interval	Type of Lubrication
Check oil level in transmission	Every 25 hours of operation	John Deere HyGard
Change transmission fluid	Every 100 hours of operation	John Deere HyGard
Lubricate throttle/choke cable	Every 25 hours of operation	WD-40
Lubricate all drive chains	Every 25 hours of operation	Chain lubricant
Inspect chain idlers	Every 50 hours of operation	Replace idler if worn
Inspect inner/outer axel bearings	Every 200 hours of operation	Replace bearings if necessary / bearings are sealed no lubrication required



## WARRANTY

RAVCO, as manufacturer, warrants to the original retail purchaser that each new vehicle is free from defects in material and workmanship for a period of (90) days from date of purchase by the original retail purchaser. Provided, however, that the vehicle tires, battery, transmission and engines are warranted by the manufacturers of those items as described on the warranty notices of said manufacturers, which are delivered at the time of the purchase of each new vehicle. Normal wear items NOT covered by warranty include: drive belt, chain, sprockets, and disc brake.

RAVCO's obligation under this warranty is strictly limited to the repair or replacement of any defective part which has been returned to the manufacturer, properly identified, shipping cost prepaid (shipping costs of replacement parts, if any, to be paid by purchaser) and determined by it to have been defective in workmanship at the time of shipment from the factory.

It is essential in the application of this warranty that the vehicle has been maintained in accordance with the maintenance procedures set forth in the Vehicle Owner's Manual, that the vehicle was not subjected to any accident or misuse, and has always been repaired with genuine vehicle repair parts by an authorized dealer. A modified AVENGER will not be warranted in any way, unless such modifications have been previously approved by the manufacturer by a written statement delivered to the individual making the claim under this warranty. Operating our vehicles in a race, modifying it with high performance parts, whether such parts are supplied by manufacturers or not, or renting a vehicle or permitting the use thereof in a manner inconsistent with normal individual ownership will be considered misuse and this warranty will not apply.

THIS LIMITED WARRANTY IS THE ONLY WARRANTY UPON WHICH SAID VEHICLE IS SOLD. VEHICLE IS PURCHASED "AS IS" AND MANUFACTURER DOES NOT WARRANT THE PRODUCT TO BE OF MERCHANTABLE QUALITY, NOR CAN THE PRODUCT BE USED FOR ANY PARTICULAR PURPOSE DESIRED BY THE PURCHASER OTHER THAN AN ATV.

No one is authorized to modify the conditions of this warranty.

RAVCO reserves the right to make changes in designs and / or improvements upon its products without any obligation to install these changes upon its products theretofore manufactured.