Amphicat

OWNER'S MANUAL

MODEL NO. 500126

MAGNA AMERICAN CORPORATION

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1. INTRODUCTION

This Manual has been prepared in order to acquaint you with your new Amphicat. Careful attention to all of the information presented in this manual will help you to avoid problems which could arise as a result of inadequate maintenance or improper operation of the vehicle. Please refer to section 5 before operating the vehicle. To validate your warranty, a ten hour inspection must be performed by an authorized Amphicat dealer or service station. The coupon attached to your warranty card for this inspection must be completed and signed by the inspector and must be presented when making a warranty claim.

The vehicle should then be serviced by the Dealer or service station following each succeeding fifty hour operation period.

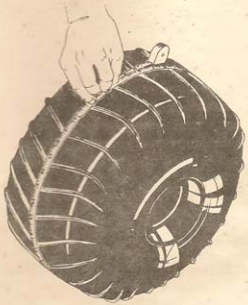
2. ASSEMBLY INSTRUCTIONS

2.1 Tire Inflation and Assembly

The tires for the vehicle are shipped deflated with the valve cores removed. The cores and special valve stem caps are packed in a cloth bag. Replace the valve cores by threading them fully into the valve stem, using the valve stem cap as an assembly tool.

For optimum performance and longer life of the drive components and tires, insure that all six tires are inflated to the same circumference.

The proper circumference is from sixty two and one half to sixty three inches. This distance is to be measured about the center line of the tire as shown in the illustration. It can be accurately measured only when the tire is raised above the ground. For this reason, inflate them prior to mounting them onto the axles. The tires are to be secured to the axles with the lock nuts provided.



TIRE INFLATION

2.2 Tire Care

To prolong the life of the tires, avoid repeated driving on paved surfaces, and drive slowly and steadily over jagged surfaces.

When storing the vehicle in extremely cold weather block it up to prevent the tires from freezing flat on the bottom. Should this flat freezing occur, drive very slowly until the rubber flexes enough to allow a smooth ride.

2.3 Tire Repair

Punctures may be repaired by the tubeless tire patching method.

3. FUEL SYSTEM, ENGINE, and TRANSMISSION

3.1 Gasoline and Oil Recomendations

Use clean, fresh "regular" grade gasoline.

Any high quality detergent oil having the American Petroleum Institute Classification "For Service MS" can be used in your Briggs & Stratton engine. Detergent oils keep the engine cleaner and retard the formation of gum and varnish deposits.

Nothing should be added to the recommended oils.

3.2 Priming the Fuel System

After filling an empty tank, the fuel system is primed by removing the spark plug and rotating the engine with the starter rope.

3.3 Starting the Engine

Move ignition switch to "on". Pull out the choke control located on the dash. Grasp the starter grip on the engine, and pull cord rapidly. Repeat if necessary with choke slightly opened. When engine starts open choke gradually.

3.4 Adjusting the Carburetor

See Briggs & Stratton engine manual supplied with your Amphicat.

3.5 Cleaning the Air Filter

Remove wing nut. Pull cover off. Remove air filter carefully to prevent dirt from entering into carburetor. Wash foam element in kerosene or liquid detergent and water to remove dirt. Wrap foam in cloth and squeeze dry. Saturate foam in engine oil, squeeze to remove excess oil. Assemble parts, fasten wing nut. Clean and re-oil every 25 hours, every few hours under extremely dusty conditions.

3.6 Engine Break-In

For a period of twenty to thirty hours, the engine should not be run at its maximum output. Allow the engine to warm at a slow idle speed. Initial operation should confined to straight and level terrain. After twenty hours of operation, gradually include higher speeds and more difficult terrain.

3.7 Transmission Oil Level

Check the transmission oil level by removing the plug at the rear of the transmission. The oil should be level with the bottom of this plug hole. To add oil, remove the vented plug on the top of the transmission and pour oil into the hole until it first drips from the rear plug hole. Do not overfill. Refer to 10.1 for type of oil to be used.

4. USE OF THE OPERATING CONTROLS

4.1 Ignition Switch

The switch positions are **OFF** and **ON**.

4.2. Choke Control

Pull on, push off. Refer to 3.3.

4.3 Throttle Control

The throttle control is located on the right hand control lever. Refer to 4.6 and 4.7.

4.4 Transmission Shift Lever

Use the transmission shift lever to select either of two forward speeds or one reverse speed. For normal running speeds, operate the vehicle with lever in the (2) position. For hill climbing or slow speed and water maneuvering, move the lever to the (1) position. To move the vehicle backward, shift the lever to the (R) position.

Under no circumstances should this shift lever be moved from any one position to another while the vehicle is moving. Shift only at a full stop with the engine running at idle speed.

4.5 Control Levers

The control levers operate the left and right clutches and brakes. To move forward in gear, (refer to 4.6) depress the throttle slightly and push both levers forward. Once moving, accelerate to the desired speed by depressing the throttle more. To stop, pull both levers all the way back. To turn right, push the left hand lever forward and pull the right hand lever back. A left turn is made in the opposite manner. To move backward, (refer to 4.6 to shift) push both handles forward while depressing the throttle slightly.

5. VEHICLE OPERATING INSTRUCTIONS

5.1 Safety Precautions

- Equip the vehicle with an approved type fire-extinguisher. Contact the Marine or Forestry commission in your area. Locate the extinguisher in an easily accessible place. Become familiar with all of the controls before operating the vehicle.
- Use both hands to steer the vehicle.
- Keep your arms, legs, hands, and feet within the perimeter of the vehicle while moving.
- Do not make fast starts when bystanders are near. Stones and other objects are easily thrown by the tires.
- Do not make high speed turns on steep grades.
- When driving on steep grades, drive straight up or down the grade rather than risk an upset by cross hill running.
- Never suddenly apply the brakes while descending a steep incline.
- Approach trenches and large obstacles slowly. When the front wheels touch the obstacle, ease the vehicle forward.
- Never operate the vehicle without the footwell or the seat in place.
- DO not attempt repairs or adjustments while the engine is running, (Except carburetor adjustment) or while the spark plug wire is connected.

5.2 Operating Precautions

Donot obstruct the air intake opening in the body. This will cause overheating. Do not let snow or rain blow onto the engine and drive components. When the vehicle is operated in a very dusty environment, the carburetor air filter must be frequently cleaned. Refer to 3.5 for cleaning. The maximum safe water load is two adult persons and 150 pounds of cargo.

6. ELECTRICAL SYSTEM

6.1 Spark Plug

Champion CJ-8 with a gap of .030 in.

6.2 Ignition Points

Set the breaker gap to .020 in.

7. ADJUSTING THE DRIVE COMPONENTS

7.1 Control Lever Adjustment

The forward position of the control levers may be adjusted in accordance with the owners preference. Before beginning the adjustment, determine the amount of adjustment desired and note how far the adjusting nuts must be moved. Remove one hair pin and the washer from the rear end of one of the linkage rods and loosen the lock nut on the front end. The lock nut is the one to the rear of the gold colored bracket. Rotate the rod, counting the number of turns, until it is in the pre-selected position, and tighten the lock nut. Adjust the other rod to the same position and re-assemble the rods with the linkage.

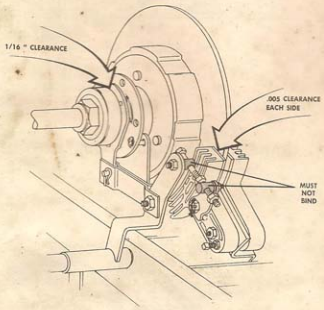
7.2 Clutch Adjustment

The clutch should be adjusted in the following manner.

With the control levers pulled all the way back, insert a 1/16 inch feeler gage between the thrust bearing and the actuator plate. Turn the large locknut clockwise to bring the bearing and actuator plate against the gage. Remove the gage and push the levers all the way forward. If they are uneven in this position, they may be adjusted as described in section 7.1. After this adjustment has been made, pull the levers all the way back. If they are uneven in this position, adjust the drag linkage nuts on the bolt which connects the clutch linkage with the brake linkage, as shown below. Insure that the drag linkage bolt does not bind on the parts through which it passes. If it does, the brake and clutch will be engaged simultaneously.

Should the vehicle fail to follow a straight course with both control levers pushed forward, it is possible that either the tires are underinflated, or the brake is dragging on the side toward which the vehicle turns.

It is possible for the clutch to cause this problem only if the actuator plate is riding all the way up on the cam plate, or if the clutch plates have become oily. Oil may be removed from the clutch plates with Carbon Tetrachloride.



BRAKE AND CLUTCH ADJUSTMENT

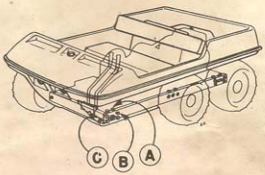
7.3 Brake Adjustment

To adjust the brakes, remove the cotter pin from the bolt which passes through the brake cam lever and rotate the castel nut clockwise until the clearance between each brake pad and the brake disc is .005 of an inch. Re-fit the cotter pin. Loosen the adjusting screw and tighten the mounting bolt next to it until the two halves of the brake assembly are parallel to each other. Re-check the clearance and re-adjust if necessary. Tighten the adjusting screw and its locknut. The cam lever should be lightly lubricated.

- In order for the brakes to function properly, the brake pads and brake discs must be entirely free of oil.

7.4 Axle Chain Adjustment

To eliminate the slack in the four chains which connect the axles, first remove the front and rear tire and axle assemblies by removing the clevis pins (inside the body) which retain them. Loosen the upper bearing mounting bolts (A) and the side bearing mounting bolts (B) as shown in the illustration. Loosen the retaining nuts on the adjustment studs (C) and adjust the slack from the chains. Take care to adjust the two bearing blocks on each axle evenly so that the tires or sprockets will not be misaligned.



AXLE CHAIN ADJUSTMENT

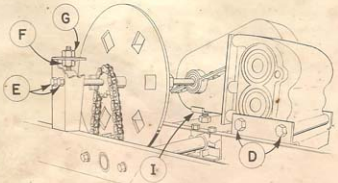
7.5 Drive Chain Adjustment

To remove slack from the drive chains, the cradle (1) which supports the chain case, must be lowered to allow the transmission and chain case to move freely. Lower it by loosening the adjusting nut above the frame cross member.

Loosen the four bolts on the chassis-transmission mount (D), the two bolts on the side of each vertical bearing support (E), and the locknut inside each vertical bearing support (F) as shown in the illustration. Turn the nuts on top of the vertical bearing supports (G) clockwise to tighten the chains.

As the entire transmission assembly pivots toward either side, care should be taken to balance the slack between both drive chains so that the main drive and brake shaft will not be tilted radically to one side. After these adjustments have been made, tighten the transmission mounting bolts and the nuts inside the vertical bearing supports.

The cradle must be raised by loosening the lock nut under the frame and turning the adjusting nut above the frame clockwise until the cradle just comes into contact with the chain case. **Do not raise the cradle any higher. It must not exert any pressure whatsoever upon the case.** Tighten the lock nut under the frame.

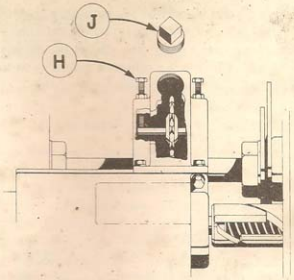


DRIVE CHAIN ADJUSTMENT

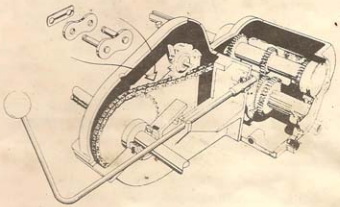
7.6 Transmission Chain Adjustment

The enclosed drive chain which transmits the drive from the transmission to the clutch shaft is adjusted by loosening the two lock nuts on the raised bolts on the chain case (H), and turning these bolts clockwise by equal turns until the chain will move only 1/8 inch when pressed downward with the finger. While the inspection plug (J) is removed, make certain that the idler sprocket is level after adjustment. Tighten the lock nuts on the adjusting bolts to maintain this adjustment.

If the master link of this drive chain is removed, it must be reassembled in the direction shown in the illustration.



TRANSMISSION CHAIN ADJUSTMENT



MASTER LINK ASSEMBLY

8. CARE OF THE PLASTIC BODY

8.1 Cleaning the Body

The Cycolac ABS plastic body will, of course, become dirty in normal operation and after prolonged exposure to weather and grime, the surface may become dulled. The original luster may be restored by polishing the body with a fine rubbing compound. The body should be throughly washed,

before and after using the compound, and then waxed. The Ford Rotunda products listed below have been evaluated by the plastic manufacturer and have been recommended for use on the body of this vehicle. The use of other cleaners or waxes may cause serious damage to the plastic. When gasoline is spilled on the body, it should be washed off with soap and water. To drain water from the body, remove the drain plug from the rear of the body and elevate the front of the vehicle.

- Liquid Car Wash R 127-A
- Tar and Road Oil Remover R 126-A
- New Car Pre-Polish R 111-C
- Silicone and Wax Remover DL 60 3721-A
- Cleaner - Wax Polish R 122-A
- Custom Auto Wax R 128-B
- **Never Use Spot Remover or Other Solvents On The Body**

8.2 Repairing The Body

If the body becomes badly damaged, consult you dealer for information on how it may be repaired. Internal stress sometimes causes white blimishes to appear on the surface of the plastic. These stress marks may be removed by heating with a hot air gun. The use of a flame gun may deform or ignite the plastic unless extreme care is exercised.

9. PREPARATION FOR STORAGE

If the vehicle is to be stored for an extended period, it should be properly prepared. Drain the fuel tank by removing the lowest fuel line near the tank. Run the engine until the carburetor has been drained. Remove the spark plug, pour one tablespoonfull of engine oil into the hole, and rotate the engine with the starter for about ten seconds to distribute the oil. Replace the spark plug. Refer to 2.2 for tire storage information.

—NOTES—

10. SERVICE GUIDE

10.1 Lubrication

Component	Chain	Inner Axle Bearings	Transmission	Outer Axle Seal
Lubrication	Dry-Slide or SAE 30 Oil	None	H.D. - EP 90 Oil	Grease
Time	As often as Necessary	Replace as Required	50 Hours	15 Hours

Refer to 3.1 for engine oil/gasoline Mixture.

10.2 Maintenance

Maintenance	Time	Attention
Dealer Inspection	10 Hours	Take vehicle to dealer - see manual, 1., 11.1
Inspect Tire Inflation	25 Hours	Inflate to 63 in. circumference, see manual 2.1, 2.2
Inspect Wheel Nuts	8 Hours	Tighten as needed
Engine	....	See Engine Manual
Chain Adjustment	8 Hours	See manual, 7.4, 7.5, 7.6
Fuel Filter	8 Hours	Replace if needed
Air Filter	8 Hours	See manual, 3.5

11. WARRANTY INFORMATION

11.1 Validation and Claim Requirements

Proof of purchase and evidence of the completion of the ten hour inspection by your dealer will be required to substantiate any warranty claim made. For this reason, insure that the warranty card is promptly mailed and that your dealer signs the ten hour inspection coupon. All warranty work must be performed by your dealer or by an authorized service station. Required service should be performed by the dealer from whom you purchased the vehicle, since he is likely to be more familiar with your particular vehicle than another representative may be.

An identification plate, bearing the model and serial numbers of this unit, is mounted on the vehicle frame near the torque converter.

For future reference, enter these numbers below and include them when ordering parts.

MODEL NUMBER	SERIAL NUMBER

11.2 WARRANTY

Magna American Corporation warrants, to the original purchaser, each new Amphicat of our manufacture to be free from defects in material and workmanship under normal use and service, our obligation under this warranty being limited to making good at the factory any part or parts thereof which shall within 90 days from date of purchase, be returned to us with the transportation charges prepaid, and which our examination shall disclose to our satisfaction to have been thus defective; this warranty being expressly in lieu of all warranties and representations expressed or implied and all other liabilities in connection with the sale or use of any Amphicat.

This warranty applies only to Amphicats manufactured by Magna American Corporation and sold in the United States.

This warranty shall not apply to any Amphicat which shall have been repaired or altered outside the factory in any way so as to affect its stability, nor which has been subject to mis-use, negligence or accident, or operated in any other way than in accordance with our operating and maintenance instructions. Nor does the warranty extend to repairs made necessary by the use of inferior parts or accessories, or by the use of types of accessories not recommended, nor does it apply to normal wear and tear.

We make no warranty with respect to trade accessories not of our manufacture, inasmuch as they are usually warranted separately by their respective manufacturers. Your Amphicat Dealer will handle the following separately warranted items: Tires, Engine, and Torque Convertor.

This warranty does not apply if the Amphicat in question has been used by an authorized Amphicat dealer or any other person prior to the original retail sale.
To make a claim under this warranty, contact the Dealer from whom your Amphicat was originally purchased or the nearest **Authorized Service Station** or Dealer. Defective parts shipped to the factory for our inspection, must show model and serial numbers, and must be shipped transporation charges prepaid.

The transmission of this vehicle is individually warranted. Please refer to the separate transmission warranty sheet.