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Thanks Richard Clark 4846 Quarry Rd New Albany IN 47150 USA



# CAMEL CENTIPEDE OWNERS' MANUAL

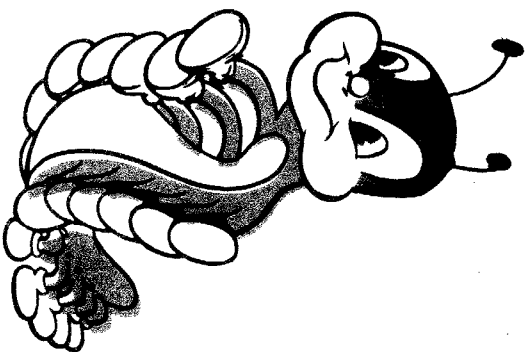


# you'll love the bug...

After several years of research the CENTIPEDE MACH II takes its place in CAMEL'S famous family of quality tents and camping trailers...the products that make the WONDERFUL OUTDOOR WORLD OF CAMEL the excitement filled, fun place to be. Backed by CAMEL'S 50 years of know-how in the camping and leisure time industry, the CENTIPEDE MACH II is the ultimate of mobility, a fun filled all terrain vehicle the entire family will enjoy. We know you will just "LOVE THE BUG"!

The CENTIPEDE MACH II has been designed as a "FOUR SEASON FUNMOBILE"! Capable of traversing sand, snow, hills, mountains, water, logs, mud, rocks, most any terrain, with proper care and handling. Different environmental conditions will require different "set ups" and adjustments. For instance, the altitude at which you operate the CENTIPEDE'S engine will determine the air-fuel mixture settings (see engine instructions).

The fun-filled action offered by the CENTIPEDE can be reduced from years to hours by improper handling and/or care. The CENTIPEDE is rugged...built to take



it, however minimum care and sensible operation is essential. Please read this manual and other operational literature enclosed in the owner's packet. Follow the instructions and suggestions for the best all around performance from your bug. One reminder: When your CENTIPEDE needs service, bring it to the man who knows best — your authorized CAMEL CENTIPEDE DEALER.

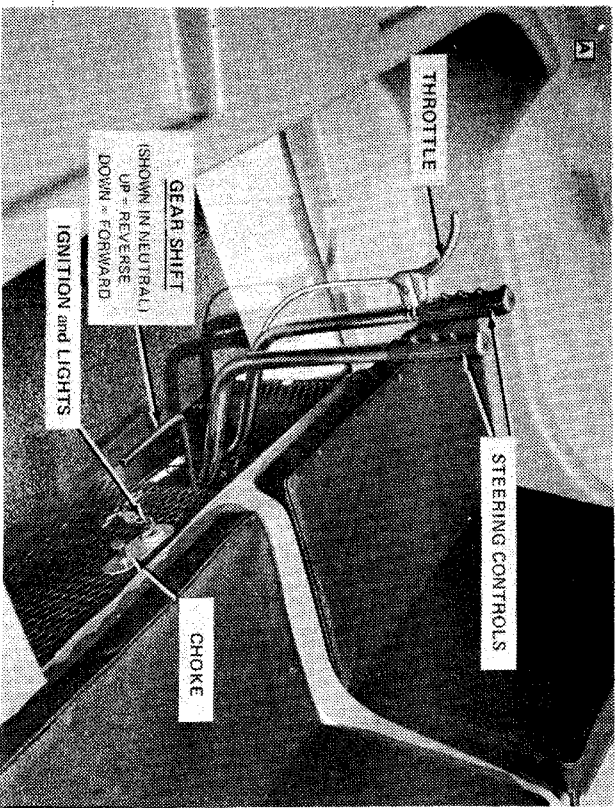
THANK YOU AND HAVE A BALL!



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# fun starts here



The controls on the CENTIPEDE have been completely checked at the factory. Your CENTIPEDE has also been given a final pre-delivery inspection by your dealer . . . all you need to do now is add the fuel.

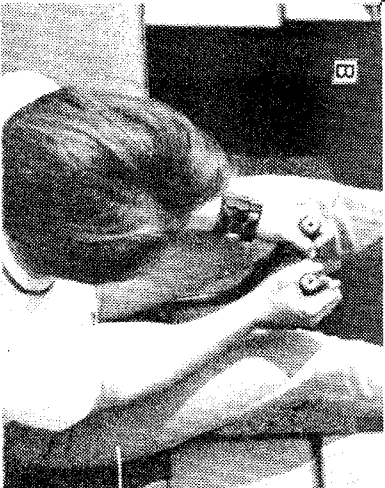
**FUEL 20 to 1 (SEE ENGINE MANUALS)**  
The CENTIPEDE has a two-cycle, air cooled engine, which runs on a mixture of oil and gas. A proper mixture of oil and gas is essential so that

the moving parts of the engine receive adequate lubrication. The correct ratio of gas to oil is 20 to 1...or one quart of oil to every five gallons of gas. Always pre-mix the gas and oil. Regular grade gasoline and SAE non-detergent #30 oil for two-cycle, air cooled engines are recommended. It is a good idea to purchase a five gallon can and mark it for your CENTIPEDE. Many ATV-ers also keep a two gallon container to carry along on extended trips. The CENTIPEDE has a 7 gallon capacity. A tank of gas will usually afford over six hours of normal operating time.

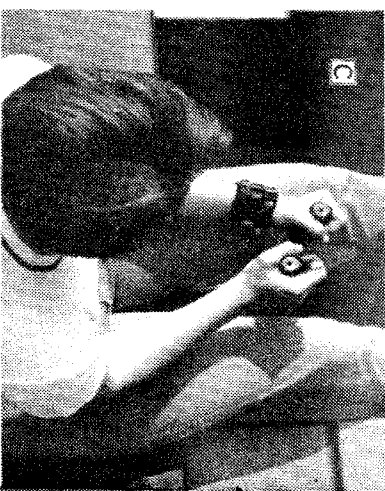
The next step is to familiarize yourself with the controls (see figure A). Before turning the ignition key, be sure the gear shift lever is in the neutral position (center).

## STARTING CHECK LIST (SEE ENGINE MANUALS)

1. Gear shift in neutral...STEERING LEVERS in the neutral (center) position.
2. If engine is cold, pull CHOKE KNOB out.
3. Turn key to starting position (Fully clock wise). As en-



4 STRAIGHT AHEAD



RIGHT TURN

gine fires squeeze **THROTTLE** gently...as engine warms push **CHOKE KNOB** in.

4. With engine at idle speed, push **SHIFT LEVER** down to forward gear.

5. To go forward move the two **STEERING LEVERS** forward in unison, slowly squeezing the throttle (on right lever). The more you squeeze the throttle the faster your **CENTIPEDE** goes.

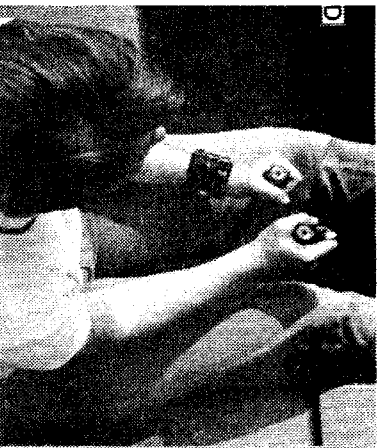
6. Direction and turning are controlled by the **STEERING LEVERS**. Speed is controlled by the **THROTTLE** working in combination with the **STEERING LEVERS**. Please allow yourself plenty of time and room to acquaint yourself with the unified action of these controls. Simply stated, it works like this. (as in figure B) equal forward pressure (and it doesn't require much) is exerted on both **LEVERS** to go straight ahead. To move in a gradual turn to the **RIGHT** (figure C) you release a little pressure or gradually pull the **RIGHT LEVER** back. To move in a gradual turn to the **LEFT** (figure D) you release a little pressure or gradually

pull the **LEFT LEVER** back. In turning, the more you re-

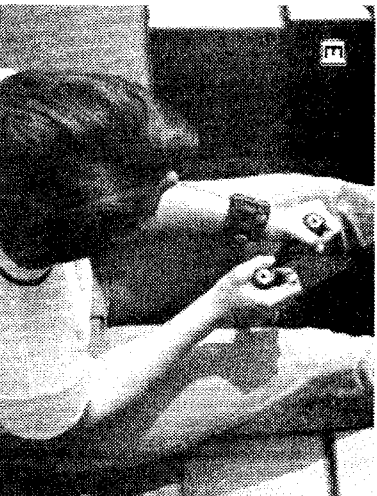
lease the pressure or pull back the **LEVER** the sharper you turn. This is because as you release and gradually move the **LEVER** back, say in turning to the right, the right three drive wheels, return to a neutral or power off stage and the left three drive wheels, with power on, "skid" you to the right. As the **LEVER** is pulled further back, the neutral position is passed and a gradual engagement of the brakes occurs, making the turn sharper (as in figures E & F). With one **LEVER** all the way back, and the other forward, the **CENTIPEDE** will pivot within its own length.

7. Deceleration takes place as the pressure on the throttle is eased. More rapid braking can be achieved by pulling back evenly on both **LEVERS** (as in figure G).

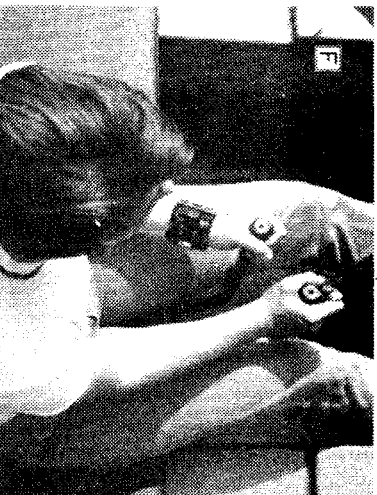
8. To back up, put the **GEARSHIFT** in reverse position (up). Pull the **LEVERS** all the way back and gently apply throttle. To back left, ease the left **LEVER** forward; back right by easing the right **LEVER** forward. In reverse gear you brake by pushing both **LEVERS** forward.



LEFT TURN



SHARP RIGHT



SHARP LEFT



STOP

# safe operating tips

## GENERAL

As we have already said, the CENTIPEDE is a real "LOVE BUG". It is fun to operate. It takes kindly to every imaginable maneuver. But please be certain to familiarize yourself with the controls of the CENTIPEDE before you take off. Practice sensible operation procedures not exceeding the capability of the CENTIPEDE or your own abilities. Avoid jerky or sudden movements of the CONTROL LEVERS, to save wear and tear on the transmission. Initiate turns after the CENTIPEDE is rolling...not from a standing position. Throttle pressure is important when executing turns. Turns will be smoother if you maintain a steady throttle pressure, even increasing it slightly. With a little practice you will acquire a "feel" for the vehicle as an experienced pilot does for his plane. When taking a "passenger" for his "first ride" explain a little of what you are going to do and what the CENTIPEDE can do. Gradually work him into that smile that never fails with the thrill of that "first ride"! **DITCHES, GULLIES and LOGS**

Approach such obstacles slowly and cautiously. In the case of logs, ease forward until the front tires touch and then increase throttle pressure and keep it steady until you are up and over. The best approach is a cautious one. Let experience and practice be your guide.



## HILLS

The CENTIPEDE was made for hills. It eats them up. The steeper the hill, the more direct your approach should be. The likelihood of tipping the CENTIPEDE with angling across a steep hill, is not very likely. However, rocks or holes can upset the balance. Angling a steep hill may also result in a down hill side-slide. **CAUTION**—There is no braking action while gear shift is in the neutral position. Also extreme caution should be used in hill climbing, particularly if a decision is made to discontinue the climb. Braking action in backing down a hill is achieved by keep-



ing the steering levers forward. This is also true if you have a power failure in hill climbing. Evaluate a hill before you start down. Choose a straight route particularly on a steep hill, as down hill turns can be tricky. Easing off or pulling back slightly on one of the STEERING LEVERS may turn the CENTIPEDE in the direction opposite to the one you expect. Pressure release on one of the levers would normally turn you in that direction, however, with the engine acting as a brake on all six wheels, releasing one side will cause that side to over run the "engine braking" effect on the other. So caution in operating STEERING LEVERS on down grades is essential. We suggest plenty of practice on this maneuver.

In going down hill, let the engine speed brake you by releasing the throttle while you keep the LEVERS forward. For more braking pull both LEVERS back evenly past the neutral position into the braking position.

### **SNOW and ICE**

You will find the CENTIPEDE loves the snow. It's quite a different ride over the trails in the Winter from that of the Summer...however, the driving techniques remain pretty much the same. Many ATV-ers use a second set of new tires for snow going. It stands to reason the deeper the tire ribs the better the traction. You may run into some difficulty in deep powdered or heavy wet snow, but by utilizing your reverse gear, backing down and then running ahead, you will soon pack in a trail and get through. Ice will naturally reduce the braking and accelerating efficiency of your CENTIPEDE. Caution is prescribed when you encounter icy conditions.

### **WATER**

The CENTIPEDE takes to the water like a duck, providing your drain plug is in place. However, it is not the Queen Mary. Never enter or leave the water at an oblique angle. For maximum water speed, use full throttle and keep your weight evenly distributed and the vehicle level. To make a turn, pull one steering lever back, and use full throttle. The water speed of the CENTIPEDE is approximately 4 MPH. It is important to keep this in mind when forging a stream with any degree of current. The CENTIPEDE is amphibious. It's great for fishing, particularly in a sheltered lake. It makes an excellent down stream float boat. When first entering any water, check under floor board to see that excessive water is not entering the vehicle.

### **BREAKING IN YOUR CENTIPEDE**

During the breaking in period it is advisable to vary speed and load conditions as much as possible. The breaking in period requires about twenty hours of driving time which is usually accomplished on three full tanks of gasoline.

### **GENERAL SAFETY**

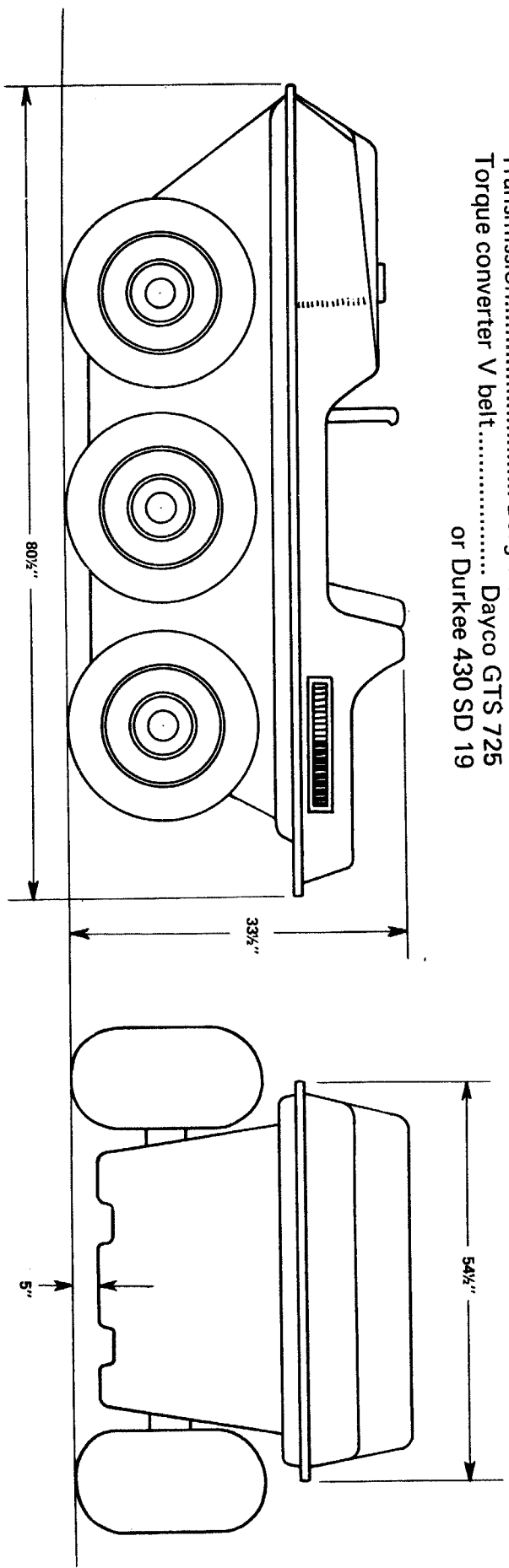
Be thoroughly familiar with the CENTIPEDE before trying any fancy maneuvers. Let the type of terrain, weather and light conditions govern your speed. If you plan to enter your CENTIPEDE in competitive rallies we suggest rollbar, seat belts and helmet. Your Camel Dealer can obtain this equipment for you.

Inserted in this manual is the address of NATVA (National All Terrain Vehicle Association). We recommend that you apply for membership. Their monthly publication is both interesting and helpful.

# Specifications

CENTIPEDE Mach II weight..... 575 lbs.  
 Length..... 80½ inches  
 Width..... 54½ inches  
 Height..... 33½ inches  
 Center line distance between wheels..... 24 inches  
     front to back  
 Road clearance..... 5 inches  
 Electrical system..... 12 volt  
 Seating..... 2 persons  
 Fuel capacity..... 7 gallons  
 Transmission..... Borg-Warner Skid Steer  
 Torque converter V belt..... Dayco GTS 725  
     or Durkee 430 SD 19

Engine.....JLO L-295, 2 cycle, air cooled, 19.5 HP  
 Headlights..... GE—35 watt, 12 volt  
 Fuse..... 6 amp  
 Main drive chain..... RC #50  
 Final drive chain..... RC #40  
 Spark plug..... Bosch 240T 1, Champion K9  
 Spark plug gap..... .016 inches — .020  
 Point gap..... .014 inches — .018  
 Fuel line filter..... Hastings—GF-27  
 Axles..... 1¼ inches solid steel



# Service and Maintenance

## ENGINE COVER

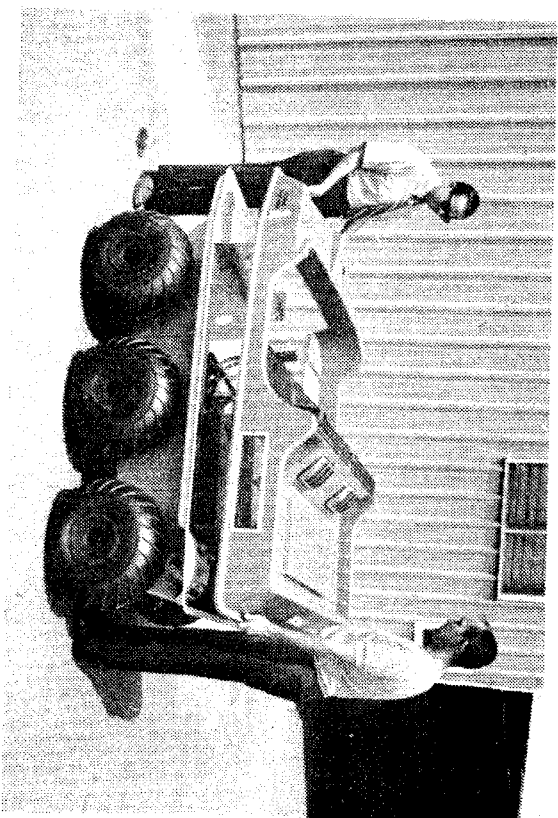
Quick access to the engine of the CENTIPEDE is provided by a hatch at the rear of the upper body. Carburetor adjustments, spark plug change, transmission oil and battery are all made through this hatch. The recoil starter cord is also reached through this hatch. The recoil starter cord is also reached through this hatch.

## UPPER BODY

For chain adjustments and more work room in general, the upper body of the CENTIPEDE may be removed by unlocking the lock screws. After lifting off the body, remove the floorboard up over the STEERING LEVERS.

## ENGINE

A two-cycle, air cooled Rockwell JLO engine (figure A) powers the CENTIPEDE. A separate Engine Manual for carburetor adjustments and engine maintenance is included with the Owner's Packet. Proper carburetor adjustment and fuel mixture is important to maintain proper engine lubrication.



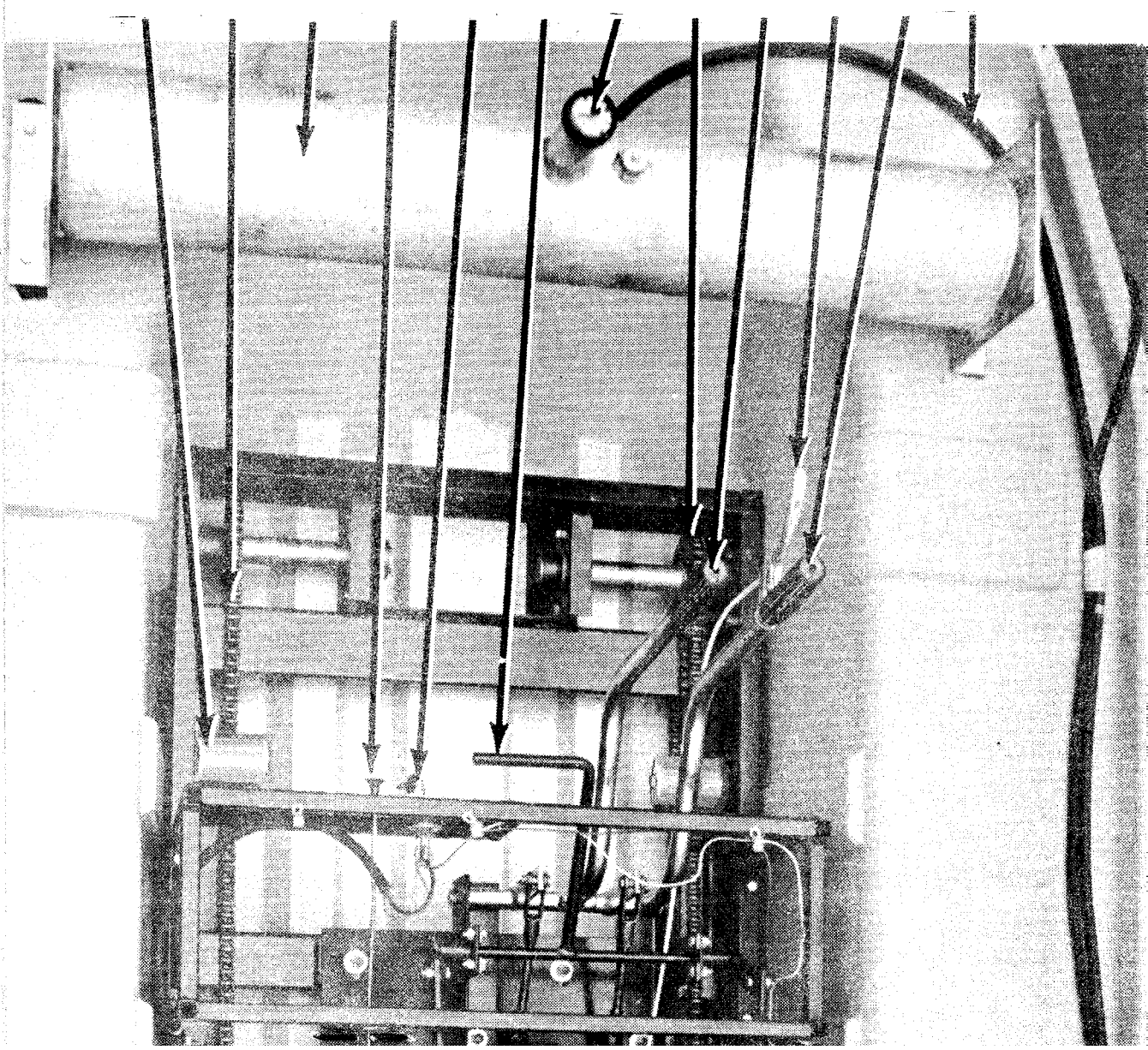
## FUEL FILTER

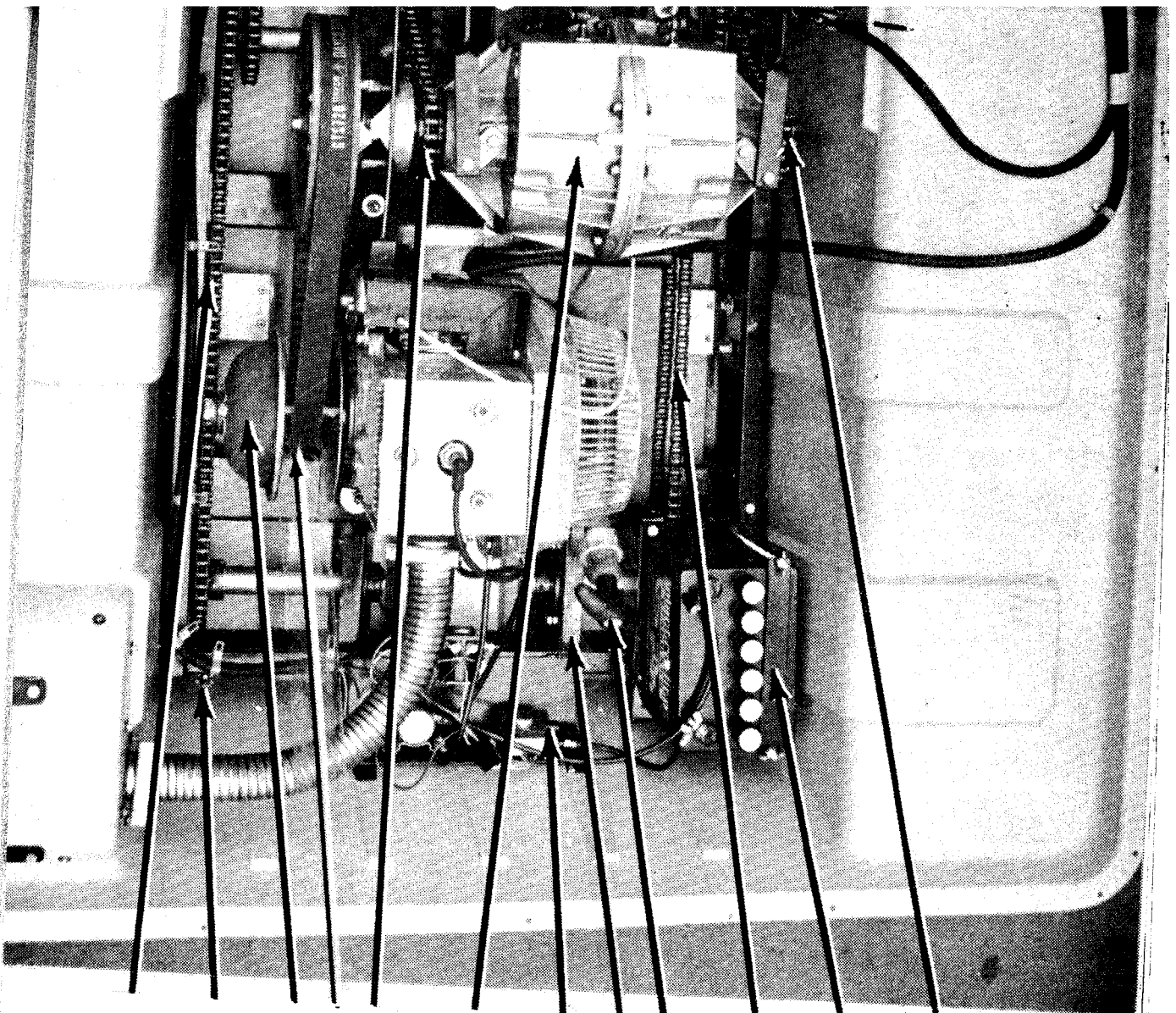
There are two fuel filters. The first filter is located in the fuel hose at the bottom of the fuel tank. It should be visually checked after three or four tank uses of gas. Normally, it will not need replacing until after 60 hours of use. The second filter is located at the bottom of the carburetor. This fuel filter should not require attention as long as the first filter is properly maintained.

## CARBURETOR AIR-INTAKE FILTER

This filter is located on the carburetor and should be cleaned periodically by removing the outer ring and cleaning the filter with any detergent and warm water.

FUEL LINE  
STEERING LEVER  
THROTTLE  
STEERING LEVER  
CENTER TO FRONT CHAIN DRIVE  
FUEL TANK GAUGE  
GEAR SHIFT  
IGNITION  
CHOKE  
FUEL TANK  
CENTER TO FRONT CHAIN DRIVE  
CHAIN ADJUSTMENT





MAIN DRIVE CHAIN

BATTERY

CENTER TO REAR CHAIN DRIVE

AUXILIARY PULL STARTER

SERIAL NO. PLATE

FUSE

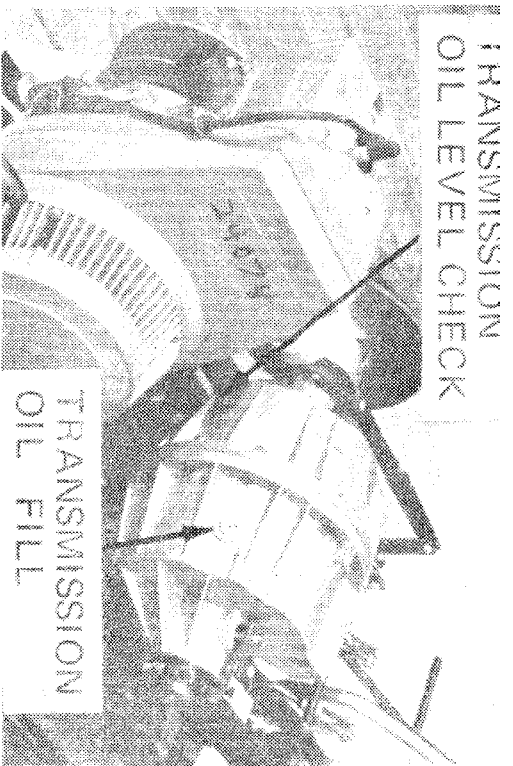
TRANSMISSION

MAIN DRIVE CHAIN  
"V" BELT

TORQUE CONVERTER

DRAIN PLUG

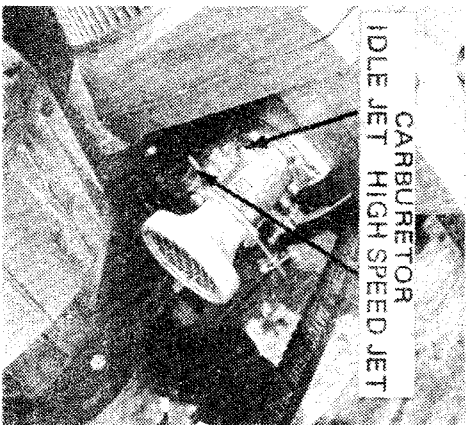
CENTER TO REAR CHAIN DRIVE



(A)

## TORQUE CONVERTER

The CENTIPEDE Torque Converter requires no lubrication or adjustments (see figure B). Any slack is taken up automatically as the engine speeds up. Care should be taken to eliminate any oil or dirt on the converter pulleys. After you have used ten full tanks of gasoline or sixty hours of operating check belt for wear by measuring its width. Proper width is 1-3/16 inches. Replace the belt if it is less than 1-1/8 inches. To replace drive belt, manually rotate each side of the transmission mounted torque converter in opposite directions, applying pressure at the same time to force the torque converter into the full open position. The old belt will fall to the bottom creating enough slack to allow the belt to pass over the engine mounted centrifugal clutch. Put the new belt on the torque converter while it is in the full open position. This should allow enough slack for the new belt to pass over the centrifugal clutch. Close the torque converter. Belt dressing can be sprayed on belt to gain more efficiency.



(B)

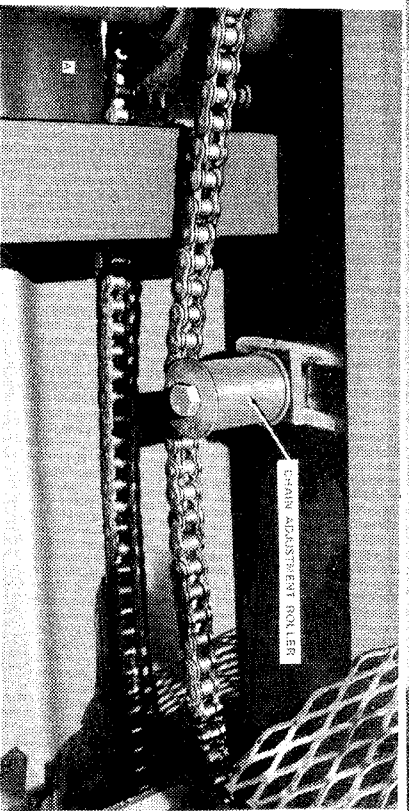
## CARBURETOR

Carburetor adjustments are made on both jets. The idle jet should be adjusted  $\frac{3}{4} \pm \frac{1}{8}$  turn from the closed position. The high speed jet should be adjusted  $1 \pm \frac{1}{8}$  turn from the closed position. Caution: Engine damage may occur if carburetor is adjusted beyond recommended limits. See detailed instruction pamphlets for additional information.

## TRANSMISSION

Your CENTIPEDE is equipped with a Borg-Warner Planetary Band Transmission. In a sense, it is two transmissions in one, as each of the two sets of three drive wheels are independently controlled. Clutching and braking is accomplished by an oil-immersed friction dual band and planetary gear (Figure A).

The Transmission will probably require no adjustment. However, at the time of your TORQUE CONVERTOR belt check (25 hours... 3 tanks of gas) you should check the oil level of the Transmission. The Transmission, in conjunction with the STEERING LEVERS, steers the CENTIPEDE. When traveling straight ahead, check to see that both steering levers are aligned equally. If you notice that one or the other needs to be drawn back slightly to maintain a straight path, the LEVERS should be realigned. This is done by adjusting the clevis at the bottom of the levers. If at any time the STEERING levers travel in excess of 10 inches, measured at the hand grips...see your Dealer.

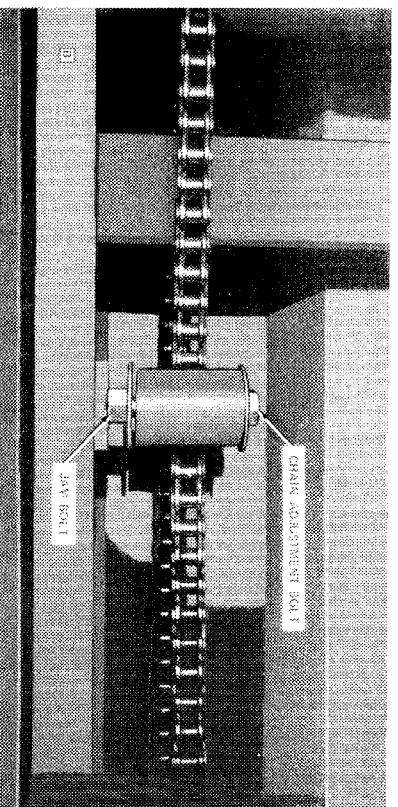


## chain drive

The chain drive consists of first; two #50 roller chains connected to a #50 sprocket on each end of the transmission drive shaft, down to #50 sprockets that are mounted on the right and left hand center axels. These chains are spliced with a master link and side plate that is secured in place with a spring clip. To replace these chains, remove master link and unwrap from sprocket. **CAUTION:** When replacing the spring clip be sure the retaining clip is properly seated over both pins on the master link. The second part of the chain drive is the #40 roller chains that drive from the center axel to the front and rear wheels. These chains are replaced in the same manner as above.

### MAIN DRIVE CHAIN ADJUSTMENT

To insure proper chain life, it is necessary to maintain a certain amount of slack on the chain. Popping noises when in a tight turn or under hard pulling conditions are indicators that drive chains should be checked for excessive slack. In the #50 main drive chain this slack is measured in the center of the span between the two sprockets and should be approximately 3/16 to 1/4 of one inch. This can readily be



checked by placing a straight edge across the two sprockets and measuring with a ruler from the bottom of the straight edge to the top of the chain (Page 12). To get the proper slack adjustment, loosen the jam nut (counter clock wise), and back off the bolt (counter clock wise) that runs through the nylon roller. One full turn should be sufficient. With hand pressure, push bolt in and slide roller toward the chain. Now turn the bolt one full turn clock wise and retighten the jam nut. **CAUTION:** Be sure that the nylon roller rotates freely. If it does not, back off some on the jam nut and bolt until roller rotates and then retighten (Figures A and B).

Proper maintenance of the Main Drive Chain is essential for safe operation of the CENTIPEDE as well as extended chain and bearing life.

### CENTER TO FRONT AND CENTER TO REAR

These adjustments are accomplished in the same manner as described for the Main Drive Chain, with the exception of the chain slack between the roller and the chain. This slack should be approximately 3/8 of one inch.

## TIRE INFLATION

Proper tire inflation is extremely important for maximum performance. All six tires should be inflated to the same circumference or the CENTIPEDE will not track true. To check for proper inflation, block up the vehicle and use ordinary tape measure (see figure A). Measure the circumference of the tire. The tire measures 63 inches at proper inflation.

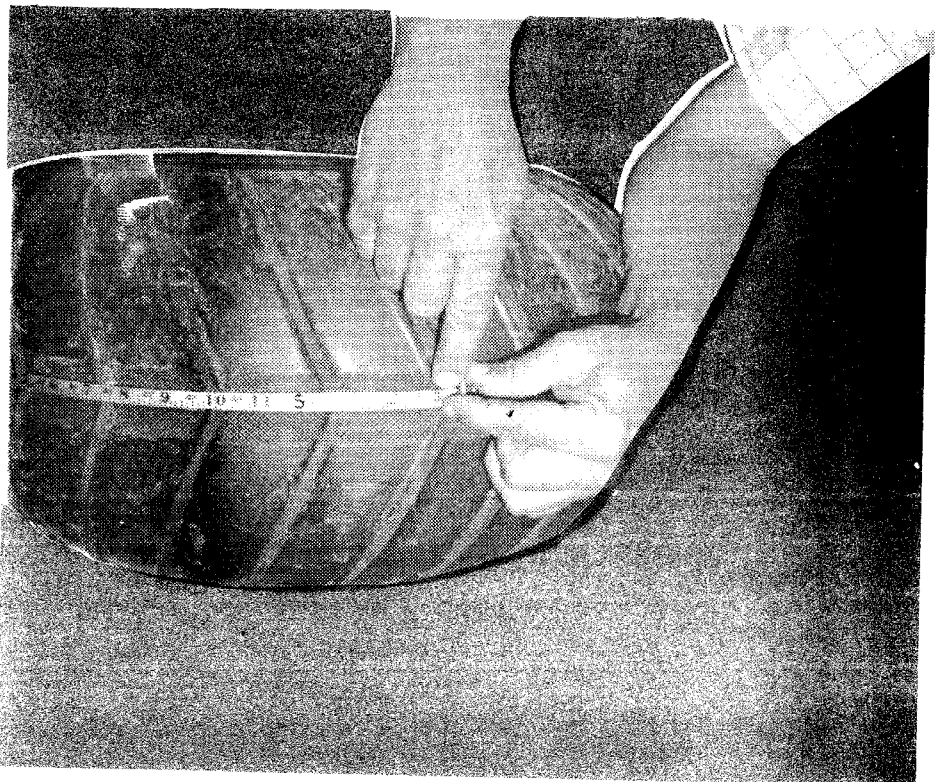
In case of puncture, simply use an ordinary cold patch kit and repair the outside of the tire as you would an intertube. If you replace a tire, be sure to note the "travel direction" arrow on the side of the tire. Right side and left side are different.

## BATTERY

A 12 volt battery is located at the rear of the CENTIPEDE Mach II and can be reached through the engine hatch. Check the water level in the cells every 10 hours of operation, keeping the level up to the bottom of the filling hole. Make certain the caps are tight at all times.

## FUSE

The electrical system is protected by a 6 amp. fuse.





## LIGHTS

A GE or Westinghouse 12 volt 35 watt #4411 light should be replaced when necessary. Light switch is located on the ignition.

## AXELS / BEARINGS

The bearings in the CENTIPEDE are sealed for life time protection against dust and dirt. They never need lubricating.

## BODY

Your CENTIPEDE body is made of Borg-Warner's high impact strength ABS CYCOLAC® Plastic. A special "How to Repair" manual provided by Borg-Warner is included in the owner's packet. A minimum of maintenance is required to maintain its high gloss. Occasional waxing will suffice. After filling the gas tank the body should be wiped clean of any spillage. The lower half of the body should be kept clean and the chain trough free from dirt. Remove drain plug (at rear lower left corner) to drain water. For complete draining, park vehicle on an incline, using chocks for BRAKE. Be sure both rubber gaskets are replaced with drain plug.

## STORAGE

The following procedure is recommended for storage of the CENTIPEDE when not in use for an extended period of time:

1. Place the vehicle on blocks.
2. Remove spark plug and place a small amount of light oil into the cylinder and turn engine over a few times. Replace spark plug.
3. Disconnect and remove battery.
4. Clean out and drain lower half of body.
5. Remove torque convertor belt.

# maintenance check list

	Every 10 hours of operation or 1 month	Every 30 hours of operation or 3 months	Every 60 hours of operation or 6 months	Every 200 hours of operation or 2 years
1 Remove floor boards and clean out chain troughs.				
2 Make visual inspection of all fasteners and chains. Lubricate chains.				
3 Check chain tension. Tighten if necessary.				
4 Check tire inflation (63" circumference).				
5 Check battery, add water if necessary.				
6 Check transmission fluid level				
7 Lubricate chains. Apply SAE #30 oil with chains rotating slowly.				
8 Oil steering levers through holes at top of handle grips.				
9 Oil control rod pivot points.				
10 Oil transmission linkage pivot points.				
11 Check wheel nuts for tightness.				
12 Clean and wax upper body.				
13 Change air filter				
14 Check steering levers for excess travel (if more than 10" measured at hand grips, see your dealer).				
15 Check torque converter belt.				
16 Change fuel filter.				
17 Disassemble torque converter pulleys and inspect for worn parts.				

# Camel ATV and recreational trailer

The Camel ATV trailer will also carry two snowmobiles or motor cycles.

Chassis — Heavy duty, all steel welded construction.

Bed deck — 5/8" Exterior grade plywood.

Wheels & tires — High-speed 4:80 x 4:00 x 8" tires.

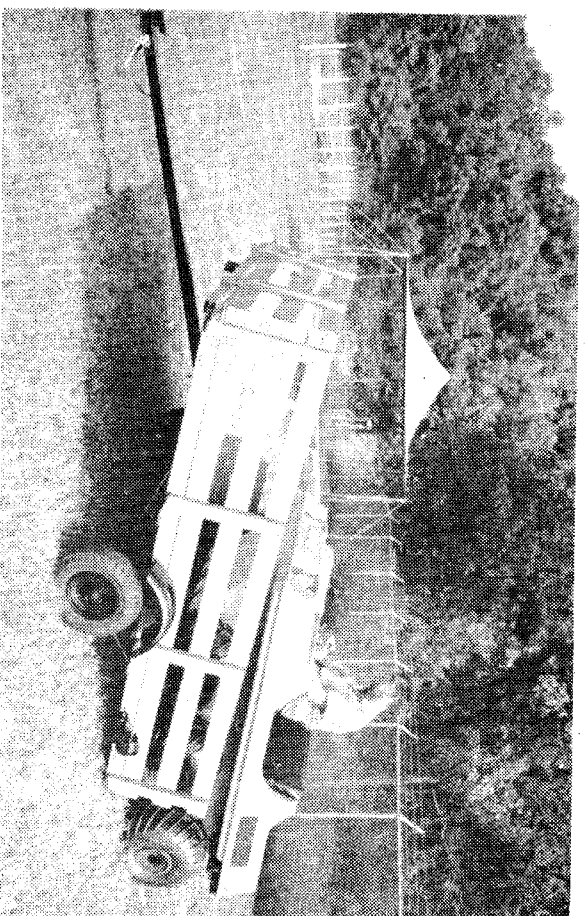
4-lug wheels. Tubless tires.

Electrical equipment — 12 Volt light system consists of 2 each stop, tail and turn signals, 7 markers

Highway Standards for Class A lighting.

Capacity — 1500 Lbs.

Hubs — High-speed Timken roller bearings.



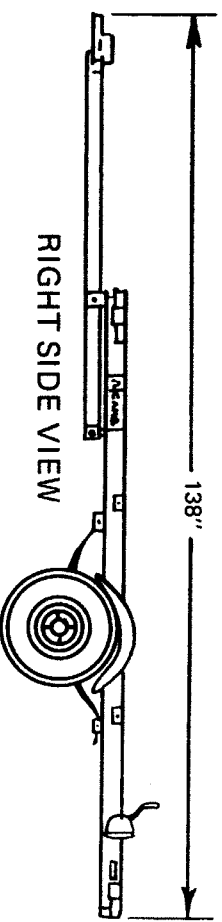
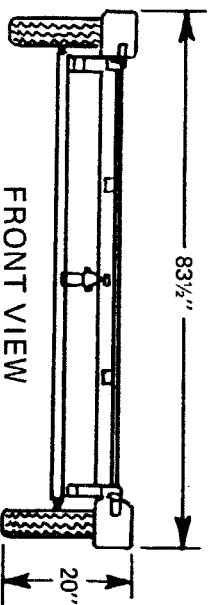
Weight — 306 Lbs.

Package — Shipped "knocked down" cardboard carton with assembly instructions included.

Finish — Baked on automotive enamel.

Tilt/Swivel loading—Rear and front tilts to ground for easy loading of any wheeled vehicle.

Note: Equipped with side board stave mounting brackets for mounting of vertical sides. Side boards are optional equipment.



# WARRANTY

"Camel Manufacturing Company (the Company) warrants its "Centipede" (excluding tires, transmission and engine, which are warranted by the respective manufacturers only) to be free of defects in workmanship and material at the time of shipment from the Company's factory.

This warranty is the only warranty upon which the Company's new products are sold. No other warranty shall be implied and all statutory warranties shall be deemed waived. No warranty of any kind, statutory, implied, or otherwise, is made with respect to second-hand products, or with respect to new products which, after shipment from the Company's factory, have been altered, repaired or treated in any manner whatsoever.

The Company will repair or replace f.o.b. its factory any part of the "Centipede" which under normal use fails within 90 days from date of delivery of such

product to the first user, provided that the Company is promptly notified thereof and that the part is returned to the Company, properly identified, charges prepaid, and is found to the satisfaction of the Company to have been defective in workmanship or material at the time of shipment of the product from the factory as aforesaid.

The Company's liability whether in contract, or in tort arising out of warranties, representations, instructions, or defects from any cause shall be limited exclusively to repairing or replacing parts under the conditions as aforesaid.

No representative of the Company has authority to change this warranty and no attempt to repair or promise to repair or improve the product by any representative of the Company shall change or extend this warranty. "

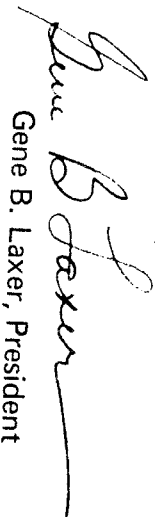
# the wonderful outdoor world

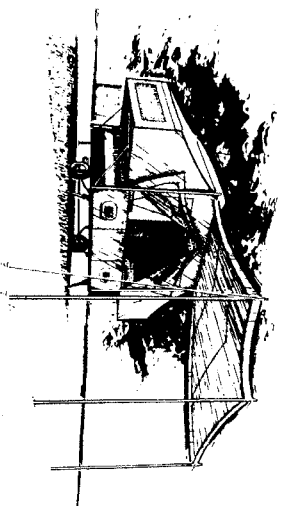
## of camel

Thank you for purchasing the CAMEL CENTIPEDE, and welcome to the WONDERFUL OUTDOOR WORLD OF CAMEL. In addition to the CENTIPEDE, Camel is also a leading manufacturer of camping tents and trailers. Some of the leading outdoorsmen have given our equipment tests under the most severe conditions...much more severe than you or I would ever submit them. All of our materials and material finishes have been developed to match or compliment each other. Our suppliers include such companies as Aluminum Company of America, Borg-Warner Corporation, Du Pont, Glen Raven Cotten Mills, Rockwell, General Tire and Rubber Company etc. All of these companies offer top quality products that have been developed and backed by millions of dollars in research facilities. In addition, we have our Research and Development staff whose function is to design products to make camping and outdoor fun easier, more pleasurable, even less expensive, and still more fun.

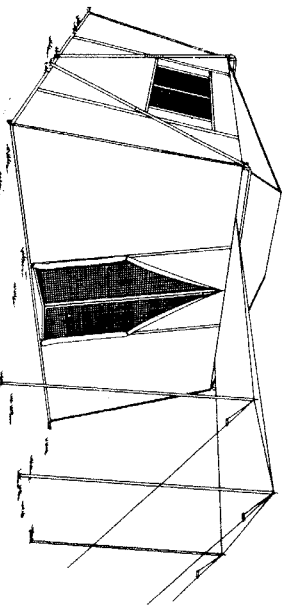
We would be more than happy to send you additional information on other fine Camel leisure time products. For free color catalogs simply write, addressing your inquiry to the attention of Sales Department.

Yours for more Outdoor Fun,

  
Gene B. Laxer, President

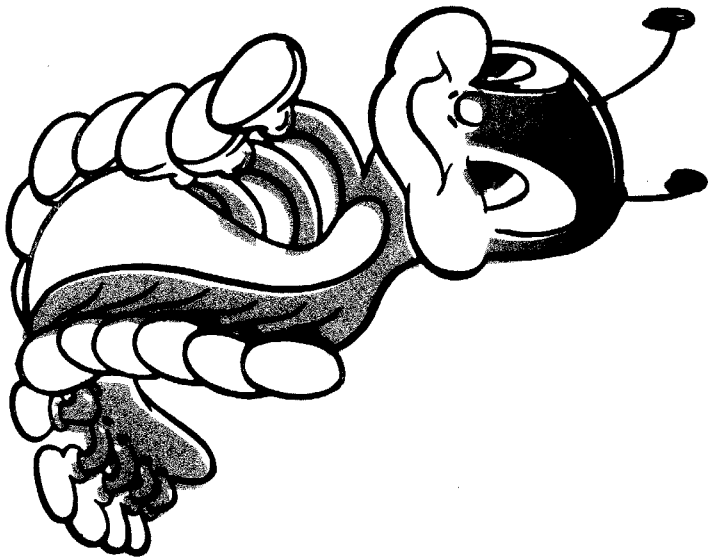


CAMEL OASIS



CAMEL TALL WALL





**CAMEL**

**CENTRE**