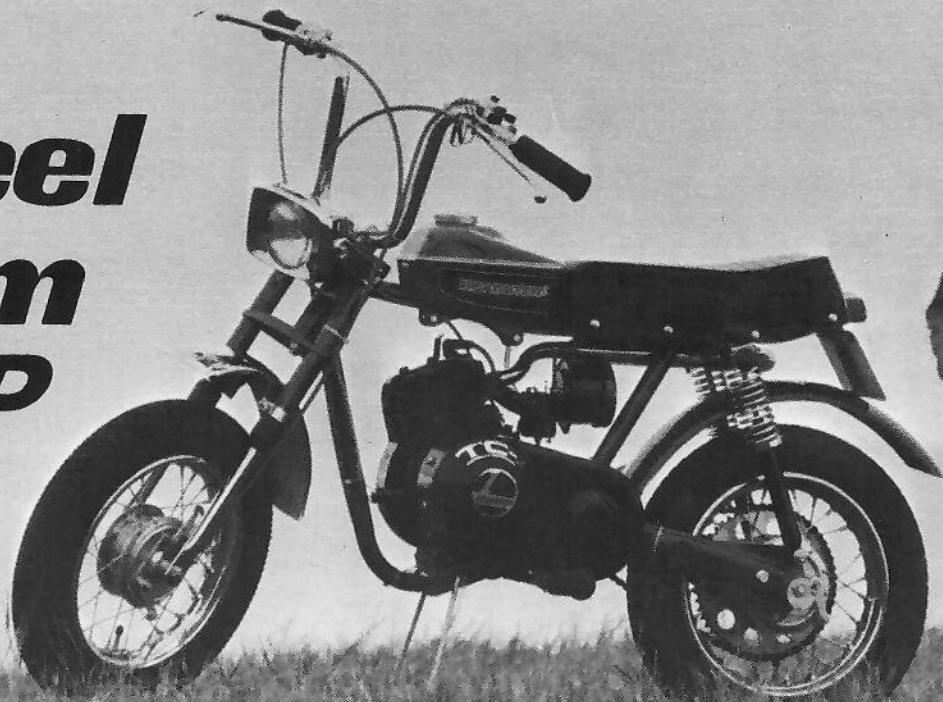


***Big
wheel
from
RUPP***



ROADSTER / HUSTLER / SCRAMBLER
OWNER'S SERVICE MANUAL

WELCOME RUPP RIDER!

We are pleased at the confidence you have shown in selecting a Rupp compact cycle from the many models available. Your Rupp cycle represents the finest in engineering, design, and workmanship which are traditional at Rupp Industries.

We ask that you read this manual carefully so you will be able to give your cycle the care and consideration it deserves. With such attention, you'll enjoy all the performance and durability built into your new Rupp machine. Make it a point to familiarize yourself with every phase of your cycle's operation and care. This manual is written with the "do-it-yourself" owner in mind who wishes to save money and time when practical.

Your Rupp dealer is vitally interested in your complete satisfaction. He stands ready to help you with your maintenance needs, repairs, or any other help you may need. His factory-trained mechanics, equipment, parts and accessories make up a team devoted to keeping you on the trails.

Thank you for choosing Rupp.



WARRANTY REGISTRATION

A Warranty Registration Form is enclosed with your new Rupp Cycle. Please fill out this form at once and return it to Rupp within ten days from the date you purchased this vehicle. This form must be on file at the factory for warranty purposes. Do not jeopardize the factory warranty on your vehicle by neglecting to return this form.

REGISTRATION CARD

The Rupp Recreational Vehicle Owner's Registration Card is a service credit card with your name and address embossed on the face of the card. It identifies you as a bona fide owner of a Rupp-manufactured recreational vehicle wherever you go.



**Rupp Recreational Vehicle
Owner Registration Card**
SNOWMOBILES · MINI-CYCLES · FUN KARTS
RUPPSTER® SPORTSBUGGY

JOHN L. CUSTOMER
1776 AIRPORT RD.
MANSFIELD OH 44903
06 13 9
666666 777777

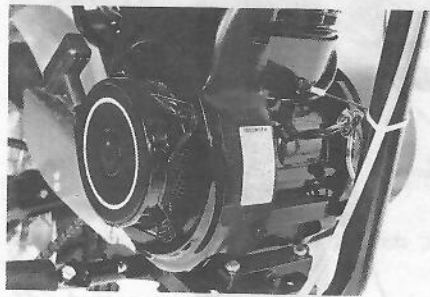
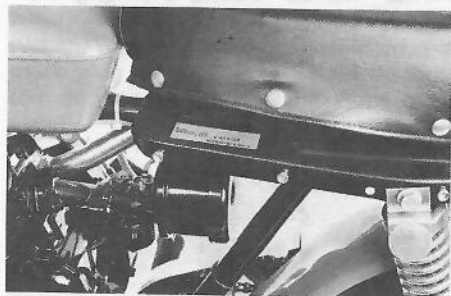
This card must be presented to your Rupp dealer whenever he performs service work on your vehicle that is covered by the factory warranty. You will receive your Rupp Owner's Registration Card directly from the factory after receipt of the completed Owner's Registration Form.

WARRANTY

Service policy and warranty information are covered in the separate "Warranty Facts Booklet."

SERIAL NUMBERS

Each minicycle has two serial numbers, a chassis number (vehicle serial number) and an engine number. Some models have a pressure sensitive decal (located under the seat cushion) bearing the vehicle serial number, on other models the number is stamped on the steering column. Another serial number plate stamped by the engine manufacturer is located on the engine housing. Use the blanks below to record your minicycle information for future reference. Your dealer will require these numbers, plus date of purchase and cycle model when working on your vehicle.



Chassis Serial Number _____

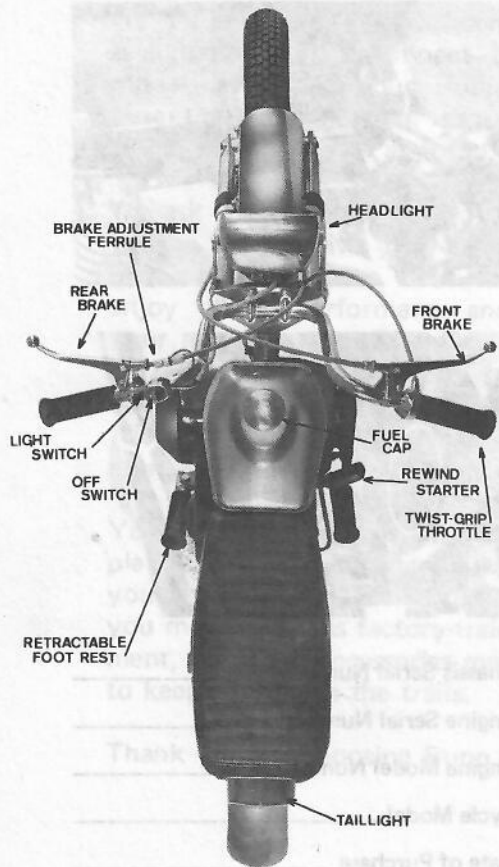
Engine Serial Number _____

Engine Model Number _____

Cycle Model _____

Date of Purchase _____

WELCOME RUPP RIDER!



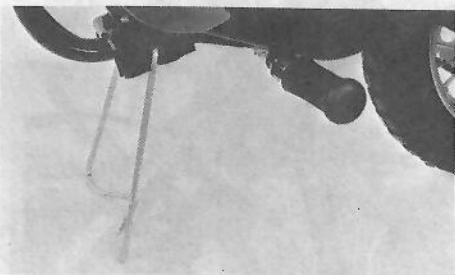
FUEL

Use only regular grade gasoline. Be sure gasoline is fresh and container is clean. Gasoline contaminated by a rusty or dirty gas can is a leading cause of an engine's failure to start or run properly. The engine in your Compact Cycle will not run properly when oil is mixed with gasoline.

CAUTION: Do not fill gas tank while engine is running or hot! Spilled gasoline on a hot engine or exhaust pipe will create a definite fire hazard. Avoid problems by allowing the engine to cool down prior to adding gasoline. Use a funnel and pour carefully. Wipe up any spillage at once.

KICKSTAND

The kickstand is designed to support the vehicle only. Do not sit on the cycle when the kickstand is down, as it can be damaged by excessive weight.



LIGHT SWITCH

On models with a lighting system, the light switch is located on the left handlebar. The center position of the switch is "OFF." Select "HI" or "LO" beam of the headlight by moving the switch forward or backward.



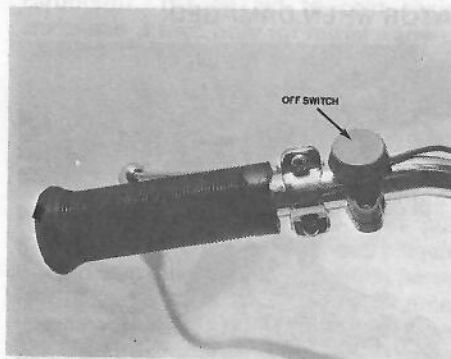
ENGINE OFF SWITCH

Three types of off switches are used:

1. Plastic "Button" Switch (On Some Models)

Located on the handlebar near the left

hand grip is a plastic "button" switch which is wired to the engine's ignition system. When the button is depressed, the spark plug will not "fire." Hold the button down until the engine stops completely.



2. Button Located On Light Switch (On Some Models)

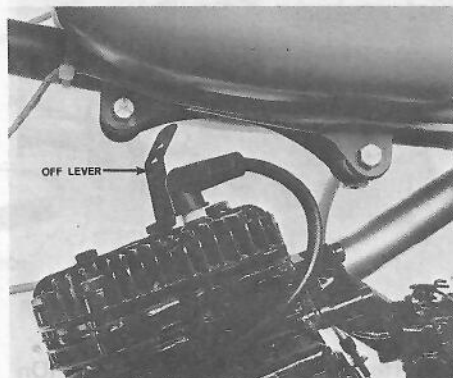
This button switch operates the same as item 1.

3. Spark Plug Ground Lever.

Push the ground lever against the spark plug rubber insulator. The sharp prongs of the lever will pass through the rubber insulator to stop the flow of current to the spark plug. Pressure on the lever must

be maintained until engine stops completely.

DANGER: DO NOT RUN THE ENGINE WITH THE RUBBER SPARK PLUG INSULATOR REMOVED. THE SPARK PLUG OPERATES ON VERY HIGH VOLTAGE. REPLACE THE INSULATOR WHEN DAMAGED.



THROTTLE

The throttle, or accelerator, is the handgrip on the righthand side of the handlebars. To move the vehicle forward or to increase speed and power, turn the handgrip toward you, (counter-clockwise). When the handgrip is turned away from you, the engine speed will return to idle. The throttle is spring loaded to return to the idle position.

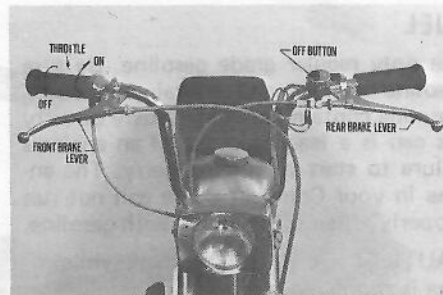
CHOKE

The choke is operated by a lever on the carburetor. When starting engine, move choke lever "arrowhead" to choke position. After the engine warms up, return the choke lever to "run" position.



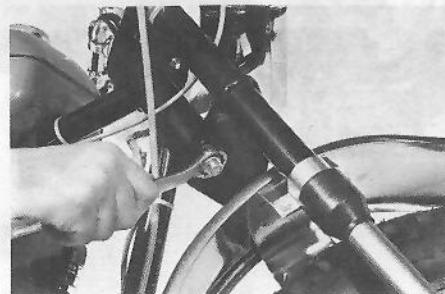
BRAKE

The rear brake control lever is attached to the left handgrip of the handle bar. On dual brake models the front wheel brake is on the right or throttle side. To operate brake, squeeze lever(s) with fingers. Let off throttle completely before putting on the brake. This will make brakes last longer. Do not use the front brake alone without actuating rear brake when cycle is in motion.



STEERING

Your minicycle steering is controlled by the handle bars. Until you are thoroughly familiar with the way your cycle handles, it is a good idea to go slow, turn carefully, and practice at low speeds. Tighten the steering column bolt until desired "steering drag" is attained.



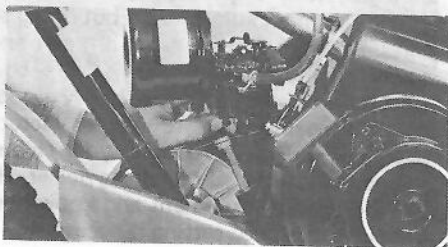
PRE-OPERATION CHECK

1. Fill gas tank with "regular" grade leaded gasoline only. Non-leaded (lead free) or low-leaded is an acceptable substitute. Do not mix oil with the gasoline. Gasoline should be fresh and in a clean container. Try not to spill any gasoline and wipe off any that has spilled.

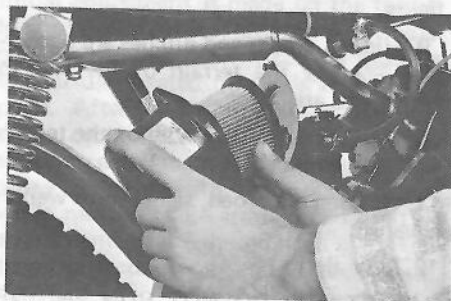
2. Fill the crankcase with clean oil. Be sure the minicycle is setting level and fill crankcase slowly to avoid trapping air. On models without dip stick, fill to top of crankcase filler hole and replace plug. If engine is equipped with dip stick, fill to full mark only.

Use "MS" classification oil only. Do not use oil unmarked or classified only "MM" or "ML." Above 32° use SAE 30W oil, and below 32° use SAE 10W oil.

NOTE: Engine failures due to lack of oil or dirty oil are not warranted by engine manufacturer.



3. Be sure air cleaner is in place and cover is securely locked. Paper element type cleaner is used which will reduce engine power when it becomes clogged with dirt.



NOTE: Dirty air entering an engine thru an improperly mounted or punctured air filter can ruin an engine in a short period. This frequently causes premature engine wear and is not covered by the engine manufacturer's warranty.

4. Check drive chain tension.

5. Check tire pressure 25 P.S.I., front and rear.

STARTING

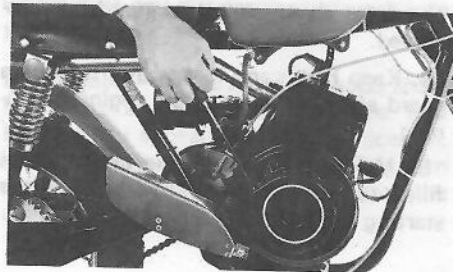
1. Check all controls to make sure they are in good working order, and make sure that the area in front of the machine is clear of obstructions.

2. Check fuel supply and be sure you have enough for the trip.

3. The choke enriches the amount of fuel in the air-fuel mixture by "choking" off part of the air from passing through the carburetor. It's an aid to cold engine starts and is used only for initial warm-up periods. Flooding can occur if the choke is used to start a warm engine.

CAUTION: Close throttle before attempting to start minicycle.

4. Pull handle of rope rewind starter until it resists, then pull hard. Do not pull starter rope to end of travel, and prevent it from snapping back. It might be necessary to repeat starting action several times if engine has not been run for some time. To avoid flooding the engine with fuel, pull twice with choke on, then return choke to RUN position.



5. After engine is running, if the choke is on, slowly return choke to: "RUN" position for proper idle and operation.

6. Allow engine to warm up.

7. Never use a "starting fluid spray bomb" or any other ether-type starting solution.

SAFETY PRECAUTIONS

Minicycle safety depends on common sense and keeping your machine in good operating condition. Learn and follow the following basic safety precautions until they become habit.

1. Do not use the front brake alone when cycle is in motion.

2. Do not touch muffler while engine is operating or immediately after turning off engine.

3. Do not operate engine when torque converter cover or other guards are removed.

4. Keep hands and feet away from chain guard and chain area while engine is running.

5. Make sure the engine crankcase is filled to the proper level with oil before starting engine.

6. Observe all caution decals.

7. Always wear a safety helmet and eye protection when riding a minicycle.

8. Watch for wires and wire fences in fields.

9. Hidden creeks and ditches are dangerous — know the terrain of the area in which you are riding.

10. Operate at safe speeds for the terrain you are traveling.

11. If riding on a road, signal turns well in advance.

12. Stay alert.

IMPORTANT: DO NOT RUN ENGINE WITH TORQUE CONVERTOR OR THE CHAIN GUARD REMOVED.

BREAK-IN

Caution should be used during the first eight hours of operation to prevent damage to the engine. Avoid prolonged full throttle operation to prevent heat build-up which could damage the engine.

After the first two tanks of gas are used, completely drain oil and refill. Oil level should be checked often during the break-in period.

Be sure air cleaner does not become clogged with dust or dirt and destroy filtering ability.

LOAD CAPACITY

Your compact cycle is designed for one rider only. Do not exceed this limit or suspension can be damaged due to overloading.

NORMAL OPERATION

After the engine is started, the bike is set in motion by turning the right handgrip (throttle) toward you. The transmission automatically engages and the operator needs only to operate the throttle. Releasing the throttle will put the transmission in neutral. The brake on the bike is operated by squeezing the brake lever(s).

Engines are preset at the factory for a maximum of 3850 RPM. After some experience, it is a great temptation to increase this maximum setting, but doing so can quickly and easily cause a major and costly engine failure which is NOT covered by warranty. If there is any doubt that the engine is not running at factory set maximum speed, contact your closest engine manufacturer's servicing dealer. He has the proper equipment and know-how to adjust the speed setting if necessary.

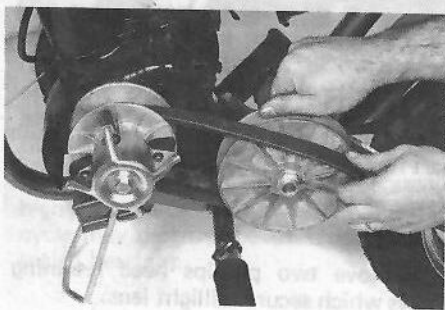
NOTE: Tying down or manually holding the governor arm open will also overspeed the engine with the same result. The evidence of this type of failure is readily discernable to a servicing dealer and is NOT covered by warranty. Any repair cost caused by over speeding the engine is the owner's responsibility. To stop the motor, press the off switch.

TORQUE CONVERTOR

No regular maintenance is required for the torque convertor drive.

DRIVE BELT REPLACEMENT

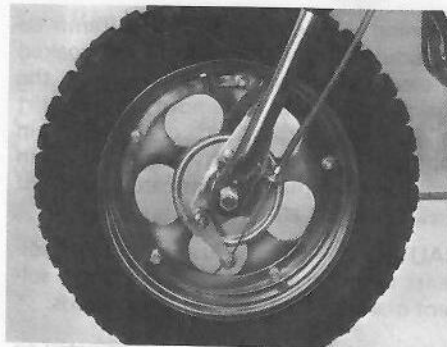
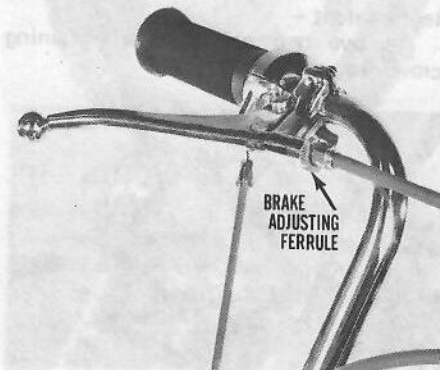
1. Remove torque convertor guard.
2. Open driven (rear) sheave by rotating inner movable half rearward (clockwise).
3. Slip belt over fixed (outer) half of driven sheave.



4. Remove belt from drive sheave.
5. Install drive belt in reverse order.

BRAKE ADJUSTMENT

Brakes can be adjusted at three locations. Initial adjustment is made on the ferrule located at the control lever on the handlebar. Further adjustment can be made at the ferrule located on the brake backing plate. After all adjustment is used up, screw cable ferrules all the way in and shorten cable length by loosening anchor screw on brake arm and pulling cable while moving brake arm closer to ferrule adjustment. Brake should have $\frac{1}{2}$ " of free travel at hand lever when adjusted.



DRIVE CHAIN

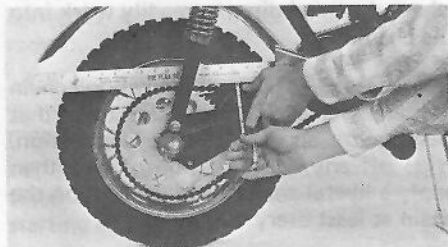
Because the chain has many parts that rub against one another, it is prone to wear if not maintained. Without lubrication, a chain can wear out within 100 miles. Develop a habit of servicing the chain on a regular schedule. This is important since you will spend the major portion of your time riding in the dirt where dust and dirt can readily work into the chain links.

Lubrication — There are many good chain lubricants available, use the type that leaves a dry appearance after application. Wipe off any accumulation of dirt, then apply a liberal amount of lubricant on the chain at least every 100 miles.

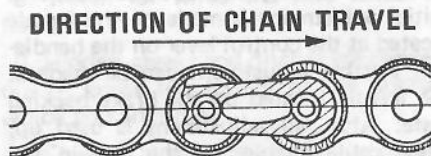
Cleaning — The chain has to be removed periodically from the machine and soaked in cleaning solvent. Completely soak the chain with solvent to remove as much dirt as possible. Drain and dry the chain thoroughly. Immediately after the chain has dried completely, lubricate to prevent rust.

CAUTION — Do not use flammable solvents in an unventilated area. Follow solvent manufacturer's recommendations.

Adjustment — Keep the chain adjusted so there is approximately $\frac{1}{2}$ " deflection maximum when manually depressed with your thumb. The chain is adjusted by loosening the rear axle bolt and then tapping the tab on the chain adjusting disks towards the rear until proper chain tension is obtained. Both adjusting disks should be rotated equally in opposite directions to prevent sprocket misalignment. Retighten axle bolt.



Master Link — A master link is provided in the drive chain for easy removal of chain. The master link retaining clip should always be installed with the closed end in the direction of chain travel.

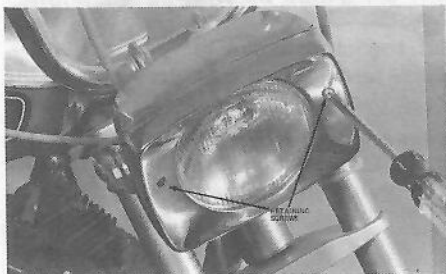


HEADLIGHT

The headlight uses a twelve volt sealed beam headlight part number 14250 (TUNGSOL 4456 12V). The headlight bulb has filaments for "Hi" and "Lo" beam.

Replacement —

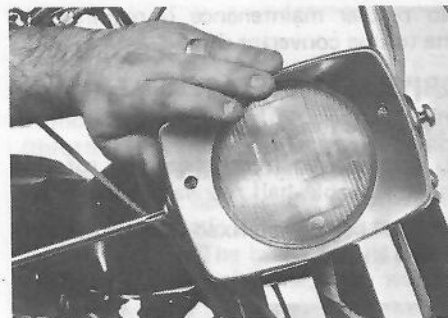
1. Remove two phillips head retaining screws from headlight bezel.



2. Pull headlight from housing and unplug bulb from harness.
3. Install new bulb in reverse order.

Adjustment —

1. Loosen retaining screws on both sides of the headlight.
2. Move headlight to desired position and retighten.



TAILLIGHT

The taillight uses a double filament bulb part number 12439 (GE 1157).

Replacement —

1. Remove two phillips head retaining screws which secure taillight lens.

2. Push bulb in and turn to the left to remove.
3. Install new bulb in reverse order.



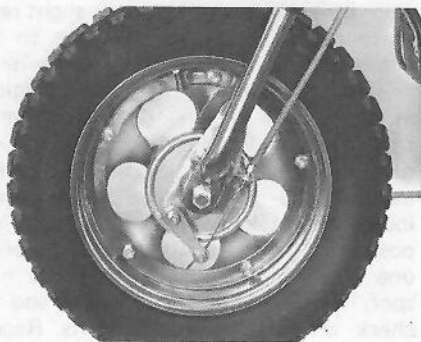
WHEELS

It may become necessary to remove the front or rear wheel for a flat repair, tire renewal, repair of brakes, or other wheel assembly components. The sealed wheel bearings do not require regular lubrication.

CAUTION: The use of a coin operated or high pressure car wash to clean your mini-cycle may destroy the lubrication in your sealed bearings.

To Remove The Wheel –

1. Support the machine so that the wheel being removed is off the ground.
2. Disconnect brake cable from brake backing plate.
3. Remove axle nut.
4. Remove axle by pulling and twisting on the axle at the same time. It may be necessary to tap axle lightly with wood or soft mallet to assist removal.



TIRE REMOVAL

Two different types of wheels are used. One type is a split rim and the other a spoked wheel. Use the appropriate procedure for the repair whether it is the front or rear tire that needs changing.

Split Rim Wheel –

1. Remove the valve cap and valve core. Empty all air from tire.

CAUTION: BE SURE ALL AIR IS OUT OF TIRE BEFORE DISASSEMBLING WHEEL.

2. Remove retaining bolts holding wheel halves together.



3. Repair tire and tube as required. Remove nail or other foreign object which caused puncture from tire.
4. Reassemble wheel in reverse order.
5. Inflate tire and release air to prevent creases in tube. Install valve core and re-inflate tire to recommended pressure.

6. Be sure valve stem is centered in rim hole and secure stem with anchor nut (if so equipped).

Spoked Wheels —

1. Remove valve cap and valve core. Empty all air from tire.
2. Use two tire removal irons and carefully work tire bead over rim edge starting from the valve and at the same time pushing the tire bead on the opposite side into the rim. Use soap or tire lubricant on tire to assist removal. (Do not use oil or grease.) Use care so you do not pinch tube.
3. After removing one tire bead from wheel, pull tube out of tire.
4. Repair tube if necessary and re-assemble.
5. If tire was removed for flat repair, be sure object which punctured tube is removed from tire.
6. If tire is being replaced, work remaining tire bead off wheel.
7. Reverse removal procedure to install tire and tube.
8. Inflate tire and release air. This will position tube in tire and prevent creases. Be sure valve stem is centered in rim hole

and secure stem with nut (if so equipped).

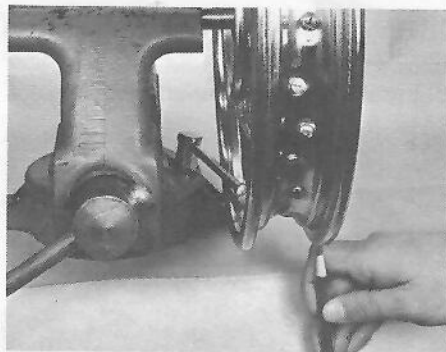
9. Re-inflate tire to recommended pressure.

SPOKE TIGHTENING

Start at the valve stem hole and work around the wheel, tighten until snug. Do not overtighten or wheel will be pulled off center. Add a drop of oil in the threads of each spoke.

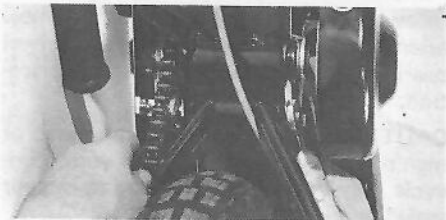
SPOKE REPLACEMENT

Assemble all spokes starting at the valve stem hole; tighten only until a slight resistance is felt. Assemble the axle to the wheel. Clamp the axle in a bench vise so the wheel can be rotated. Rigidly mount a piece of chalk or a grease pencil to mark the high spots on the outer rim of the wheel then rotate the wheel. After locating the high spots on the wheel loosen the spokes (approx. one turn) opposite the high spot and tighten (approx. one turn) the spokes nearest the high spot. Remove the chalk marks and re-check the wheel for high spots. Repeat the preceding spoke adjusting process until the wheel runs true. (Allowable tolerance is $\pm 1/8$ inch) When the chalk leaves a continuous line around the hub the wheel is running true. After wheel is centered tighten spokes evenly all the way around. Do not overtighten.



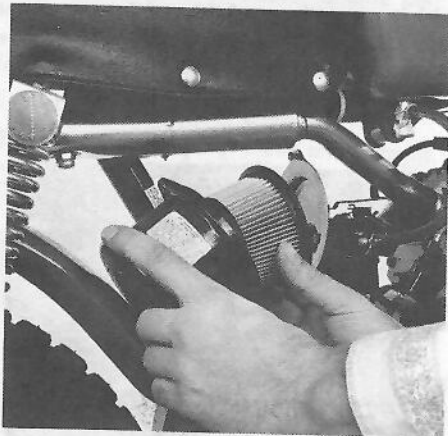
SUSPENSION

Periodic lubrication with a "heavy" base grease such as wheel bearing or axle grease is required to keep the front fork struts working freely. No lubrication is required for the rear suspension system. Frequently inspect the swing frame bolt for tightness, tighten to 20-25 foot pounds.



AIR CLEANER

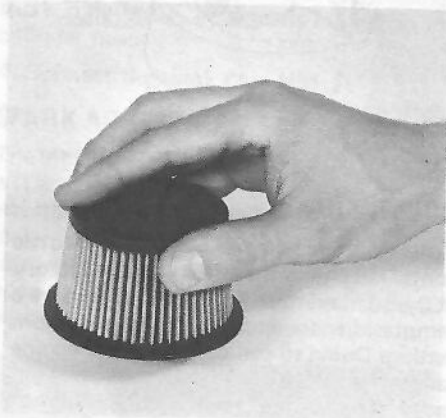
To remove the air cleaner for maintenance, loosen the two retaining screws and rotate counterclockwise.



The air cleaner should be removed often and tapped against a solid surface to loosen dirt accumulation. The pores will eventually clog with mud or dirt (engine will lose power) and the air cleaner will have to be replaced. Your engine manufacturer dealer stocks them.

Never wash or brush dirt from the paper air cleaner since this destroys its filtering capability. Inspect your air cleaner often.

A punctured or cracked paper air filter will allow dirt to enter the engine. This will quickly ruin your engine by wearing out the piston and cylinder wall. The engine manufacturer will not warranty the engine when the damage was caused by a defective air cleaner.

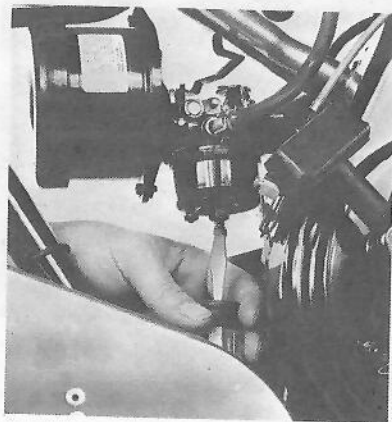


CARBURETOR ADJUSTMENT

Carburetors are adjusted for maximum performance at the factory but can be adjusted if necessary. Carburetor high speed settings must be made with engine at full throttle. The cycle must be blocked up securely so the back wheel is free of the ground.

A dirty or partially clogged air cleaner will partially choke off the flow of air, causing your engine to run rich and lose power. Clean or change the air cleaner element before altering carburetor settings.

1. Close "high speed adjustment needle" by turning needle clockwise. Do not force since this will damage needle internal seat.
2. Open needle (counterclockwise) one turn.



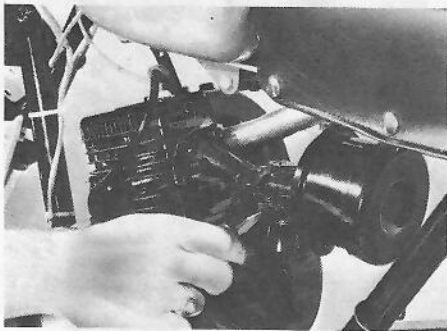
3. Close "idle adjustment needle" by turning clockwise. Do not force since this will damage needle internal seat.

4. Open "idle" needle (counterclockwise) five-eighths (5/8") turn.

5. Start engine.

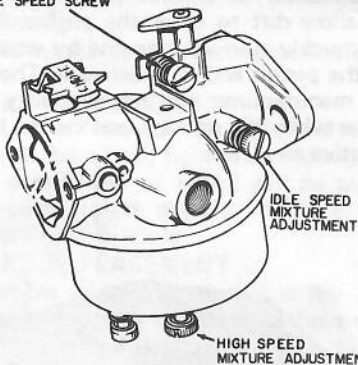
6. With engine running at full throttle adjust "high speed adjustment needle" in or out 1/8 turn at a time until engine runs smoothly. Allow engine to operate at each new needle setting for at least 10 seconds to give engine time to react. When engine is running at its smoothest, the correct setting has been reached.

CAUTION: DO NOT OPERATE ENGINE AT FULL THROTTLE FOR EXTENDED PERIODS.



7. Close throttle until engine is idling and adjust the "idle adjusting needle" in the same manner.

IDLE SPEED SCREW



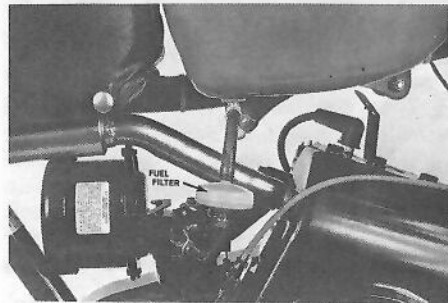
GOVERNOR

Your cycle has a governor in the throttle control. Engines are preset by the factory at 3,850 maximum RPM. You may have a temptation to increase this maximum setting. Doing so can cause a major engine failure which is NOT covered by warranty. The engine manufacturer will not warranty engines that have had the governor tampered with.

If there is any doubt that your engine is not running at factory set maximum speed, contact your closest engine manufacturer servicing dealer who has the proper equipment and know-how to check and adjust the speed setting if necessary.

FUEL FILTER

The fuel tank has a screen filter in the outlet fitting. If a lack of fuel flow is noted, remove the outlet fitting, clean, and replace. If you experience problems with "dirty" fuel or containers, you may wish to install an additional inexpensive fuel filter in the fuel hose. These are readily available from your dealer or most auto parts stores.



SPARK PLUG

Operation with old or wrong type spark plugs will be reflected in engine performance as indicated by hard starting, missing, overheating, preignition or lack of normal power. Whenever engine performance indicates that the spark plugs are in need of attention, service as follows:

1. Disconnect spark plug lead.
2. Remove spark plug, clean and inspect, or replace with a new one. Adjust gap to .030".

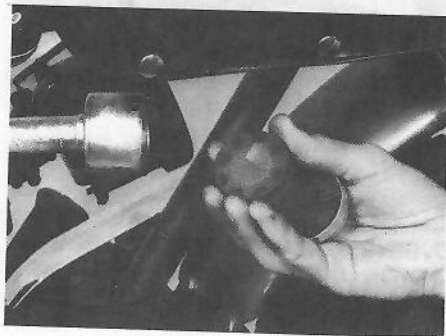


3. Install spark plug. Be sure that gasket is in good condition. Start the threads one or two turns with fingers to avoid danger of cross-threading. After seating plug finger tight on a new gasket, an additional $\frac{1}{2}$ turn with a wrench generally will be sufficient to tighten. Do not overtighten; insulator may crack, due to overstressing spark plug body, or threads may strip in cylinder head.

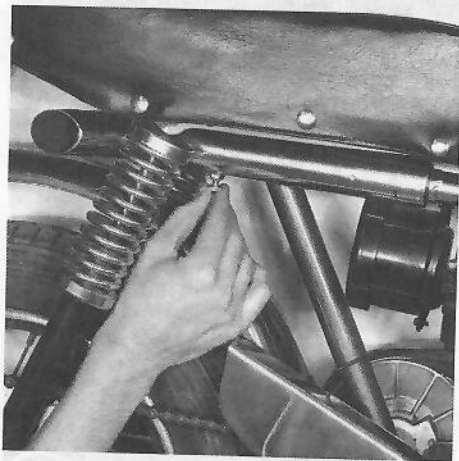
4. Connect the spark plug lead.

SPARK ARRESTOR

The mufflers on all models are equipped with a spark arrestor. These spark arrestors must be cleaned periodically to make certain exhaust openings are not restricted. Spark arrestors must be kept open and all burned out or leaking parts replaced for peak engine efficiency.



Two types of spark arrestors are used. One is a separate screen and the other is part of the muffler. To clean the screen type, remove two screws holding cover and clean screen. To clean the sealed muffler types, remove screw plug from bottom of pipe and operate engine to purge carbon thru screw hole.



CRANKCASE OIL

Change oil regularly. Be sure drain plug is replaced securely before refilling. Be sure the minicycle is setting level and fill crankcase slowly to avoid trapping air. On models without dip stick, fill to top of crankcase filler hole and replace plug. If engine is equipped with dip stick, fill to full mark only. Use "MS" classification oil only. Do not use oil unmarked or classified only "MM" or "ML." Above 32° use SAE 30W oil, and below 32° use SAE 10W oil. Check oil level frequently between changes and add oil if required.



IMPORTANT — AFTER FIRST TWO TANKS OF GAS, DRAIN OIL AND RE-FILL. OIL LEVEL SHOULD BE CHECKED OFTEN DURING "BREAK-IN" PERIOD. AFTER "BREAK-IN," CHANGE OIL EACH TWENTY-FIVE (25) HOURS OF OPERATION, OR SOONER IF CONDITIONS REQUIRE. WHEN OIL BECOMES BLACK, IT SHOULD BE REPLACED AT ONCE.



ENGINE FAILURES DUE TO LACK OF OIL OR DIRTY OIL ARE NOT WARRANTED BY ENGINE MANUFACTURER.

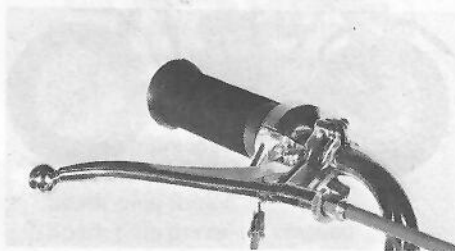
EXTENDED STORAGE

If you plan to store your cycle for an extended period of time, follow this procedure:

1. Disconnect fuel line at carburetor and drain fuel into suitable container.
2. Start the engine and run the carburetor dry.
3. Remove the spark plug and pour one tablespoon of oil (SAE 30 or 40) through the spark plug hole. Turn the engine over a few times to coat the piston and cylinder walls. Replace the spark plug.
4. Remove the torque converter belt.
5. Cover the cycle and store in a dry place to prevent metal parts from rusting.
6. Store the cycle with the wheels off the ground.

SET-UP INSTRUCTIONS

1. Remove mini-cycle from carton.
2. Install handlebars on the fork mounting plate with "U" bolts provided and position for rider comfort. Tighten nuts securely so handlebars cannot slip from desired position.
3. Place seat cushion on chassis and snap upholstery cover in place. Plastic covering on foam rubber cushion is used to prevent moisture penetration; do not remove.
4. Install rear brake cable on left handlebar brake lever and front cable on right brake lever. Screw adjustment ferrule into brake lever all the way. Attach cable by positioning pin end of cable into brake handle; rotate 90° and align adjustment ferrule slits until cable and cover goes into recess in end of adjustment ferrule.



5. Brake levers should have approximately ½" movement (at the cable) before the brake shoe makes contact with the drum.

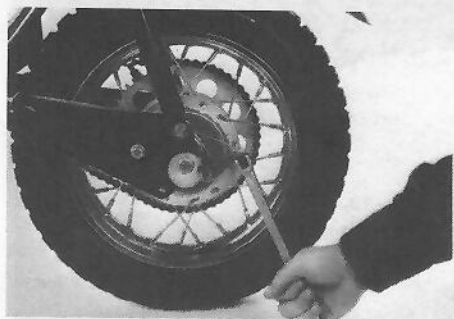
NOTE: THE RECOMMENDED BRAKE LEVER ADJUSTMENT MAY NOT HOLD TRUE IF THE RIDER HAS SMALL HANDS. IN THE CASE OF A MINI-CYCLE RIDDEN BY MORE THAN ONE PERSON, THE BRAKE LEVER SHOULD BE ADJUSTED TO THE PERSON WITH THE SMALLEST HANDS. IN THE PROCEEDING CASES THE LEVER "FREE TRAVEL" (MOVEMENT BEFORE ENGAGEMENT) MUST BE INCREASED.

6. The brakes have three points of adjustment.

(a) Brakes can be adjusted by screwing out the ferrule located at the control lever on the handlebar.

(b) Brakes can be adjusted in the same way by the ferrule located on the brake backing plate at the wheel hub.

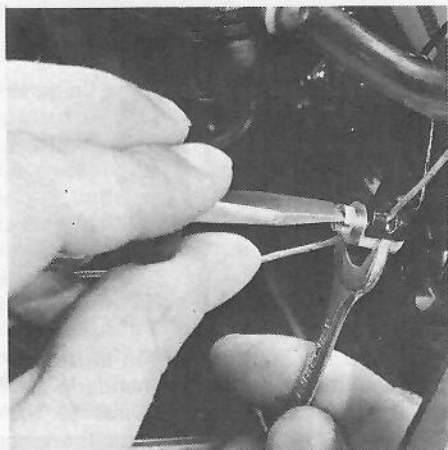
(c) When satisfactory adjustment cannot be obtained with the adjustment ferrules, screw both ferrules all the way in and shorten cable length by loosening anchor screw on brake backing plate arm. Pull cable through anchor and retighten anchor.



7. Clamp the light switch/kill button to the handlebar near the left handgrip and connect the loose brown wires to the brake light switch terminals on the rear brake cable housing near the rear brake lever.

8. Install the throttle cable ferrule (enclosed in the envelope packed under the seat cushion) in the recess part of the twist grip adaptor ring. Route the throttle cable through the forks just under the handlebar mounting plate then through the adjustment ferrule on the engine. Secure the throttle cable to the governor arm with the cable anchor provided.

CAUTION: DO NOT OVER-TIGHTEN THROTTLE CABLE ANCHOR SCREW ... STRANDS OF THE THROTTLE CABLE MAY BREAK.



Before starting engine, be sure throttle cable operates smoothly and will return to idle position. If the engine is started with the throttle wide open the torque convertor will immediately engage.

9. Fill the crankcase with clean oil and check for leaks. Be sure the machine is sitting level and fill the crankcase slowly to avoid trapping air; fill to full mark only or until oil runs out fill hole.

10. Use "MS" classification oil only. Do not use unmarked oil or oil classified only "MM". Above 32° use SAE 30W oil, below 32° use SAE 10W oil.

11. Position a container under the open end of the fuel line and pour a small quantity of clean, fresh "Regular" gasoline into the tank; shake the machine a few times to clear the tank and line of any dirt that may have accumulated in the system during shipment.

12. Insert open end of fuel line on carburetor inlet fitting and secure with spring hose clamp.

13. Fill gas tank with "Regular Grade Leaded" gasoline and check for leaks. Non-leaded (lead free) or low-leaded gasoline is an acceptable substitute.

14. Refer to the appropriate section of this manual for specific information on the following:

- (a) Check chain tension and alignment.
- (b) Inspect suspension and steering.
- (c) Start engine and test operation.
- (d) Adjust carburetor if necessary.
- (e) Check lighting system.
- (f) Check tire pressure (25 pounds front and rear).
- (g) Be sure your Owner's Registration Form is sent to the factory.

TORQUE SPECIFICATIONS

SWING FRAME BOLT	20-25 FT. LBS.
AXLE BOLTS	35-45 FT. LBS.
DRIVE T/C BOLT	40-60 FT. LBS.
STEERING COLUMN BOLT	30-35 FT. LBS.
REAR SHOCK BOLT	20-25 FT. LBS.



TROUBLE SHOOTING

The following are the most common troubles experienced and the probable causes.

NOTE: Items shown with an asterisk (*) may be corrected by owner. All others must be performed by an authorized Tecumseh servicing dealer. Repairs by an unauthorized source can void the engine manufacturer's warranty.

ENGINE FAILS TO START OR STARTS WITH DIFFICULTY

- Blown head gasket
- * Engine over-choked
- Faulty magneto
- Loose or defective magneto wiring
- * Improper carburetor adjustment
- * No fuel in tank
- * Obstructed fuel line
- Poor compression
- * Shut-off valve closed
- * Spark plug fouled
- * Spark plug porcelain cracked
- * Water in fuel

ENGINE MISSES UNDER LOAD

- * Improper carburetor adjustment
- * Improper spark plug gap
- Improper valve cleanane
- Magneto breaker arm sluggish
- Pitted magneto breaker points
- * Spark plug fouled
- * Spark plug porcelain cracked
- Weak valve spring

ENGINE LACKS POWER

- * Air cleaner fouled
- Carburetor dirty or damaged
- * Choke partially closed
- Ignition system malfunction
- * Improper carburetor adjustment
- Lack of lubrication
- Leaky head gasket
- Magneto improperly timed
- Valves leaking
- Worn piston or rings

ENGINE KNOCKS

- Carbon in combustion chamber
- Improper magneto timing
- Loose flywheel
- Loose or worn connecting rod
- Worn cylinder

ENGINE SURGES OR RUNS UNEVENLY

- * Carburetor throttle linkage or throttle shaft and/or butterfly binding or sticking
- Governor parts sticking or binding

ENGINE OVERHEATS

- Carbon in combustion chamber
- * Carburetor improperly adjusted
- * Cooling fins clogged
- Engine improperly timed
- * Excessive load on engine
- Lack of lubrication

ENGINE VIBRATES EXCESSIVELY

- * Associated equipment out of balance
- Bent crankshaft
- * Engine not securely mounted

HIGH OIL CONSUMPTION

- Damaged or worn oil seals on end of crankshaft
- * Excessive load on engine
- Engine speed too fast
- * Oil level too high
- Piston ring end gaps aligned
- * Loose oil fill cap or gasket damaged or missing
- Rings not seated properly
- Breather malfunctioning
- Worn rings, piston or cylinder

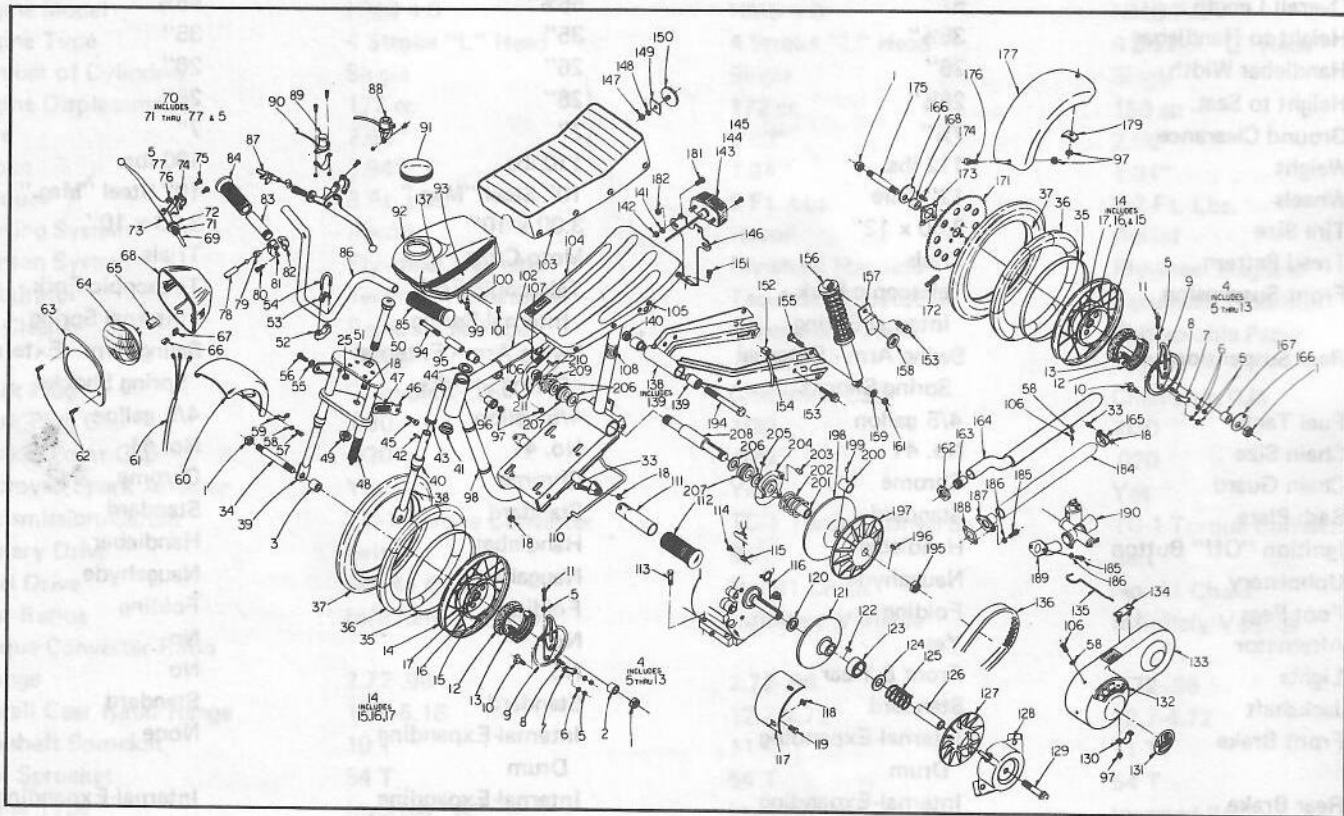
SPECIFICATIONS

	ROADSTER II	HUSTLER	SCRAMBLER
Engine Manufacturer	Tecumseh	Tecumseh	Tecumseh
Engine Model	HMB 4.0	HMB 4.0	HMB 3.5
Engine Type	4 Stroke "L" Head	4 Stroke "L" Head	4 Stroke "L" Head
Number of Cylinders	Single	Single	Single
Engine Displacement	172 cc	172 cc	150 cc
Bore	2.63"	2.63"	2.50"
Stroke	1.94"	1.94"	1.84"
Torque	6 Ft. Lbs.	6 Ft. Lbs.	5.2 Ft. Lbs.
Starting System	Recoil	Recoil	Recoil
Ignition System	Flywheel Magneto	Flywheel Magneto	Flywheel Magneto
Carburetor	Tecumseh Floatbowl	Tecumseh Floatbowl	Tecumseh Floatbowl
Air Cleaner	Replaceable Paper Filter	Replaceable Paper Filter	Replaceable Paper Filter
Spark Plug	Champion CJ8	Champion CJ8	Champion CJ8
Spark Plug Gap	.030	.030	.030
Breaker Point Gap	.020	.020	.020
Approved Spark Arrestor	Yes	Yes	Yes
Transmission/Clutch	TC-1 Torque Converter	TC-1 Torque Converter	TC-1 Torque Converter
Primary Drive	Belt	Belt	Belt
Final Drive	No. 41 Chain	No. 41 Chain	No. 41 Chain
Gear Ratios	Infinitely Variable	Infinitely Variable	Infinitely Variable
Torque Converter-Ratio Range	2.72-.96	2.72-.96	2.72-.96
Overall Gear Ratio Range	14.5-5.18	12.7-4.72	12.7-4.72
Jackshaft Sprocket	10 T	11 T	11 T
Rear Sprocket	54 T	54 T	54 T
Frame Type	Inverted "A"	Inverted "A"	Inverted "A"

SPECIFICATIONS

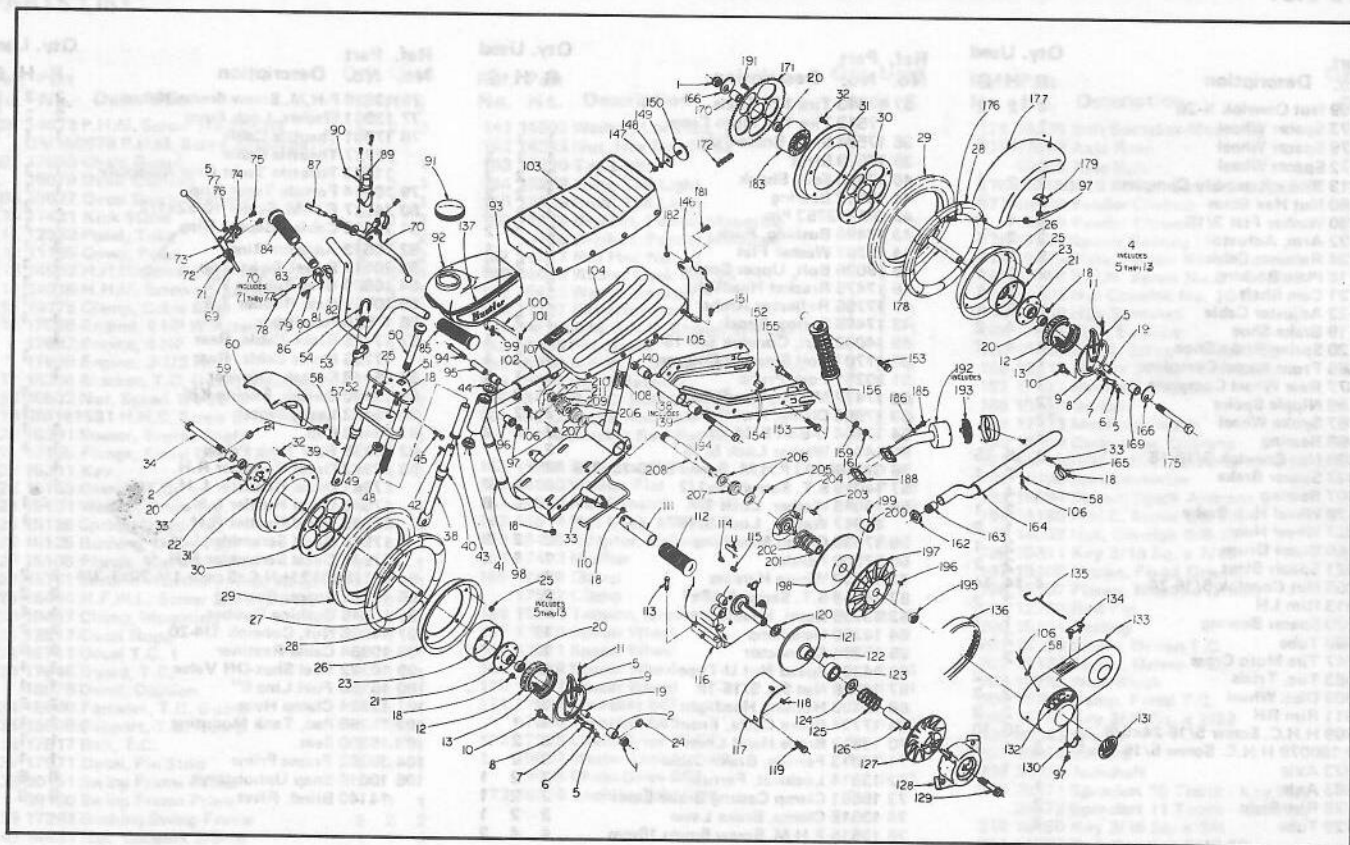
	ROADSTER II	HUSTLER	SCRAMBLER
Wheelbase	38½"	37"	37"
Overall Length	57"	55½"	55½"
Height to Handlebar	35½"	35"	35"
Handlebar Width	26"	26"	26"
Height to Seat	26½"	26"	26"
Ground Clearance	7¼"	7"	7"
Weight	112 lbs.	110 lbs.	100 lbs.
Wheels	12" Wire	10" Steel "Mag."	10" Steel "Mag."
Tire Size	3.00 x 12"	3.00 x 10"	3.00 x 10"
Tread Pattern	Trials	Moto Cross	Trials
Front Suspension	Telescopic Fork - Internal Spring	Telescopic Fork - Internal Spring	Telescopic Fork - Internal Spring
Rear Suspension	Swing Arm - External Spring Shocks	Swing Arm - External Spring Shocks	Swing Arm - External Spring Shocks
Fuel Tank	4/5 gallon	4/5 gallon	4/5 gallon
Chain Size	No. 41	No. 41	No. 41
Chain Guard	Chrome	Chrome	Chrome
Bash Plate	Standard	Standard	Standard
Ignition "Off" Button	Handlebar	Handlebar	Handlebar
Upholstery	Naugahyde	Naugahyde	Naugahyde
Foot Pegs	Folding	Folding	Folding
Alternator	Yes	No	No
Lights	Front & Rear	No	No
Jackshaft	Standard	Standard	Standard
Front Brake	Internal-Expanding Drum	Internal-Expanding Drum	None
Rear Brake	Internal-Expanding Drum	Internal-Expanding Drum	Internal-Expanding Drum

ROADSTER II PARTS



HUSTLER/SCRAMBLER PARTS

PARTS LIST



PARTS LIST

MUSTANG PARTS

Ref. Part			Qty. Used			Ref. Part			Qty. Used			Ref. Part			Qty. Used		
No.	No.	Description	R	H	S	No.	No.	Description	R	H	S	No.	No.	Description	R	H	S
1	14059	Nut Conelok 1/2-20	4	2	2	37	17513	Tire 12" Trials	2			76	13959	P.H.M. Screw 6mmx18mm	2	2	1
2	17673	Spacer Wheel	1				17512	Tire 12" Moto Cross				77	13961	Washer, Lock 6mm	2	2	1
	17679	Spacer Wheel		2	2	38	17534	Strut Brake Side	1	1		78	17901	Throttle Cable	1	1	1
3	17672	Spacer Wheel	1			39	17529	Strut	1	1	2		17717	Throttle Cable			
4	17813	Brake Assembly Complete	2	2	1	40	17470	Seal, Shock	2	2	2		11583	Throttle Twist Grip Assembly	1	1	1
5	13960	Nut Hex 6mm	8	8	4	41	10107	Bearing	2	2	2	79	10514	Ferrule Twist Grip	1	1	1
6	14080	Washer Flat 3/16	4	4	2	42	GM103753	Pin	2	2	2	80	14017	F.H.M. Screw 10-32x1/2	2	2	2
7	18122	Arm, Actuator	2	2	1	43	17496	Bushing, Fork	2	2	2	81	10512	Cable Adaptor Ring	1	1	1
8	18124	Retainer Cable	2	2	1	44	12967	Washer Flat	1	1	1	82	10513	Adaptor Ring	1	1	1
9	18118	Plate Backing	2	2	1	45	18026	Bolt, Upper Spring	2	2	2	83	10511	Barrel Twist Grip	1	1	1
10	18121	Cam Shaft	2	2	1	46	17479	Bracket Headlight	2			84	10809	Grip Rubber 1"	1	1	1
11	18123	Adjuster Cable	2	2	1	47	17796	Reflector Amber	2			85	10769	Grip Rubber 7/8"	1	1	1
12	18119	Brake Shoe	4	4	2	48	17465	Spring, Shock	2	2	2	86	17515	Handlebar	1	1	1
13	18120	Spring Brake Shoe	4	4	2	49	14032	Nut, Conelok 5/8-18	1	1	1	87	17725	Brake Cable, Rear	1		
14	18366	Front Wheel Complete	1			50	17701	Bolt Steering Column	1	1	1		17726	Brake Cable, Rear		1	1
	18377	Rear Wheel Complete	1			51	30251	Fork Prime	1	1	1	88	15418	Switch, Dimmer	1		
15	15589	Nipple Spoke	72			52	17477	Mount, Handlebar	2	2	2	89	13900	Switch, Engine Kill			1
16	18367	Spoke Wheel	72			53	17663	Clamp, Handlebar	2	2	2	90	15322	Lead, Switch			1
17	18368	Bearing	4			54	17664	U-Bolt 5/16-24	2	2	2	91	13468	Cap	1	1	1
18	14029	Nut Conelok 5/16-18	9	15	15	55	14047	Washer Lock 5/16	2			92	30255	Fuel Tank Prime	1	1	1
19	17922	Spacer Brake	2	1		56	GM160693	P.H.M. Screw 5/16-18x7/8	2			93	17942	Decal Roadster R.H.	1		
20	17907	Bearing	4	4	4	57	14019	S.T. Screw 14x1/2	4	4	4		17941	Decal Roadster L.H.	1		
21	18128	Wheel Hub Brake	2	1		58	14045	Washer, Lock 1/4"	7	6	6		17946	Decal Hustler L.H.			1
22	17927	Wheel Hub	1	1	2		14047	Washer, Lock 5/16"					17945	Decal Hustler R.H.			1
23	17665	Brake Drum	2	1		59	17538	Clamp Mounting	2	2	2		17948	Decal Scrambler L.H.			1
24	17921	Spacer Strut	2	2	2	60	17500	Fender	1	1	1		17947	Decal Scrambler R.H.			1
25	14055	Nut Conelok 5/16-24	4	14	14	61	14252	Wiring Harness	1			94	GM180042	H.H.C. Screw 1/4-20x1-3/4	2	2	2
26	17913	Rim LH	2	2	2	62	14018	S.T. Screw 8-18x1	2			95	15352	Spacer Bushing	2	2	2
27	17920	Spacer Bearing	1	1	1	63	13795	Bezel, Headlights	1			96	15345	Bushing Rubber	4	4	4
28	15380	Tube	2	2	2	64	14250	Headlamp	1			97	14028	Nut, Conelok 1/4-20	7	7	7
29	17547	Tire Moto Cross	2			65	15386	Connector	1			98	10934	Cable Retainer	6	6	6
	15083	Tire, Trials	2	2	2	66	14303	Speed Nut U-Type	2			99	10322	Fuel Shut-Off Valve	1	1	1
30	17909	Disc. Wheel	2	2	2	67	14026	Nut Sq. 5/16-18	2			100	16150	Fuel Line 6"	1	1	1
31	17911	Rim RH	2	2	2	68	15420	Housing Headlight	1			101	12324	Clamp Hose	2	2	2
32	17109	H.H.C. Screw 5/16-24x5/8	10	10		69	17724	Brake Cable, Front	1	1		102	15295	Pad, Tank Mounting	1	1	1
33	GM 180079	H.H.C. Screw 5/16-18x1	3	8	7	70	13812	Brake Hand Lever	2	2	1	103	15300	Seat	1	1	1
34	17923	Axle	1	1	1	71	13813	Ferrule, Brake Cable	2	2	1	104	30252	Frame Prime	1	1	1
	17683	Axle	1			72	13814	Locknut, Ferrule	2	2	1	105	10016	Snap Upholstery	8	8	8
35	17728	Rim Strip	2			73	15591	Clamp Casting Brake Lever	2	2	1		14140	Blind, Rivet	8	8	8
36	17729	Tube	2			74	13816	Clamp, Brake Lever	2	2	1						
						75	13815	F.H.M. Screw 5mmx18mm	4	4	2						

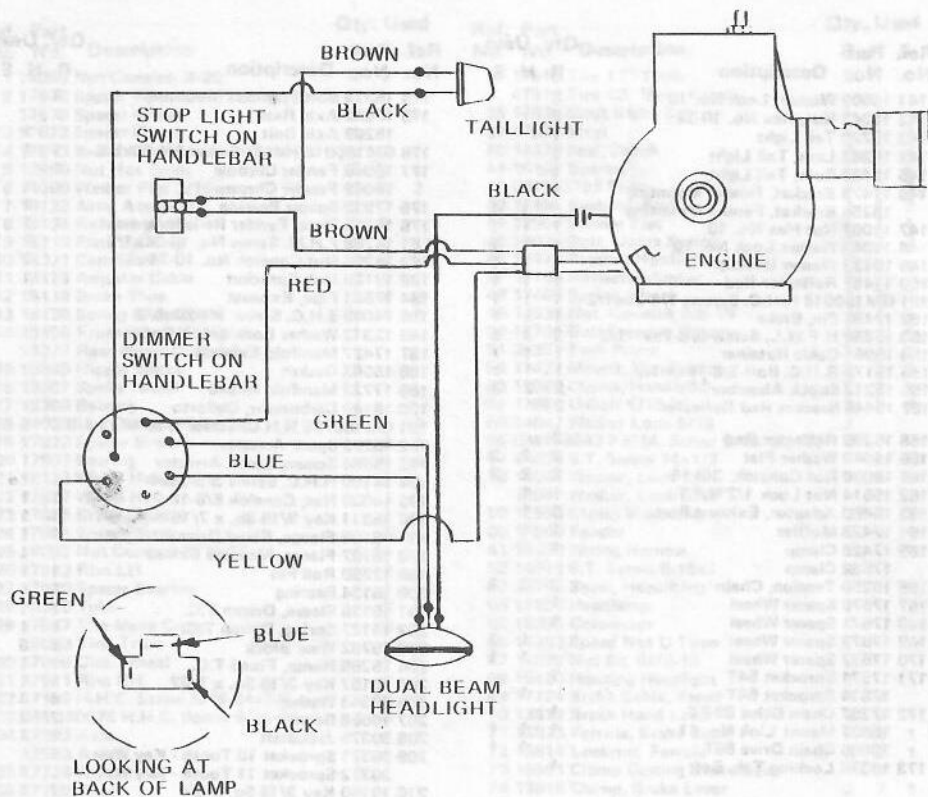
PARTS LIST

Ref. Part No. No.	Description	Qty. Used		
		R	H	S
106	14013 P.H.M. Screw 1/4-20x1/2	4	4	3
	GM160679 P.H.M. Screw 5/16-18x1/2			
107	17660 Chain Guard	1	1	1
	18079 Decal Caution	1	1	1
108	18027 Decal Spark Arrestor	1	1	1
110	17431 Kick Stand	1	1	1
111	12382 Pedal, Tube	1	1	1
112	11185 Cover, Pedal	2	2	2
113	14002 H.H.C. Screw 5/16-18x1-1/2	2	2	2
114	14016 H.H.M. Screws 8-32x5/16	4	4	4
115	10176 Clamp, Cable Stop	1	1	1
116	17686 Engine, 4 HP W/Alternator	1		
	17687 Engine, 4 HP			
	17699 Engine, 3-1/2 HP	1		
117	15384 Bracket, T.C. Guard Mounting	1	1	1
118	10502 Nut, Speed 1/4-20	2	2	2
119	GM181591 H.H.C. Screw 5/16-24x1/2	2	2	2
120	15391 Spacer, Engine Shaft	1	1	1
121	15105 Flange, Fixed Drive T.C.	1	1	1
122	15311 Key	1	1	1
123	15153 Bearing T.C.	1	1	1
124	15131 Washer, Drive T.C.	1	1	1
125	15126 Spring, Drive T.C.	1	1	1
126	15125 Bushing, Drive T.C.	1	1	1
127	15106 Flange, Movable Drive	1	1	1
128	15151 Bracket Assembly, T.C. Weight	1	1	1
129	15444 H.F.W.L. Screw 3/8-24x1-1/2	1	1	1
130	10467 Clamp, Mounting	1	1	1
131	13817 Decal Rupp	1	1	1
132	15711 Decal T.C. 1	1	1	1
133	17646 Guard, T.C.	1	1	1
	18078 Decal, Caution	1	1	1
134	15540 Fastener, T.C. Guard	1	1	1
135	15609 Support, T.C. Guard	1	1	1
136	17617 Belt, T.C.	1	1	1
137	17971 Decal, Pin Strip	1	1	1
138	30151 Swing Frame Prime	1		
	30150 Swing Frame Prime		1	1
139	17292 Bushing Swing Frame	2	2	2
140	14031 Nut, Conelok 3/8-16	1	1	1

Ref. Part No. No.	Description	Qty. Used		
		R	H	S
141	14502 Washer, Lock No. 10	2		
142	14343 Nut, Hex No. 10-32	2		
143	15220 Tail Light	1		
144	15288 Lens, Tail Light	1		
145	12439 Bulb, Tail Light	1		
146	17475 Bracket, Fender Mounting	1		
	15256 Bracket, Fender Mounting		1	1
147	14067 Nut Hex No. 10	1	1	1
148	14043 Washer Lock No. 10	1	1	1
149	15433 Washer Backup	1	1	1
150	11487 Reflector Red	1	1	1
151	GM180016 H.H.C. Screws 1/4-20x1/2	1	1	1
152	17495 Pin, Brake	1	1	1
153	15230 H.F.W.L. Screw 3/8-16x1-1/2	3	3	3
154	15061 Cable Retainer	1	1	1
155	15178 R.H.C. Bolt 3/8-16x1-1/2	1	1	1
156	15212 Shock Absorber	2	2	2
157	15446 Bracket Red Reflector	2		
158	15286 Reflector Red	2		
159	14040 Washer Flat	2	2	2
161	14030 Nut Conelok, 3/8-16	2	2	2
162	15514 Nut Lock 1/2 N.P.T.	1	1	1
163	15460 Adaptor, Exhaust Port	1	1	1
164	17423 Muffler	1	1	1
165	17426 Clamp	1	1	1
	17532 Clamp			
166	15250 Tension, Chain	2	2	2
167	17670 Spacer Wheel	1		
168	17671 Spacer Wheel	1		
169	17678 Spacer Wheel	1	1	1
170	17677 Spacer Wheel	1	1	1
171	17971 Sprocket 54T	1	1	1
	17814 Sprocket 54T			
172	17252 Chain Drive 88 PT	1	1	1
	15637 Master Link No. 41		1	1
	19066 Chain Drive 86T		1	1
173	18378 Locking Tab, Bolt	1		

Ref. Part No. No.	Description	Qty. Used		
		R	H	S
174	18379 Bolt Sprocket Mounting	4		
175	17682 Axle Rear	1		
	15269 Axle Bolt		1	1
176	GM180018 H.H.C. Screw 1/4-20x5/8	1	1	1
177	18048 Fender Chrome	1		
	18049 Fender Chrome		1	1
178	17919 Spacer Bearing	1	1	1
179	15315 Plate, Fender Re-inforcement	1	1	1
181	14798 P.H.M. Screw No. 10-24x1/2	2	2	2
182	14206 Nut Conelok No. 10-24	2	2	2
183	18129 Hub Sprocket	1	1	1
184	17531 Pipe, Exhaust	1		
185	14009 S.H.C. Screw 1/4-20x5/8			2
186	12312 Washer Lock 1/4 Hi-Collar			2
187	17427 Manifold Exhaust			2
188	15593 Gasket			1
189	17723 Manifold Intake			1
190	18149 Carburetor, Dellorto			1
191	GM180705 H.H.C. Screw 5/16-18x3-1/8	5	5	5
192	15296 Spark Arrestor			1
193	15594 Screen, Spark Arrestor			1
194	14180 H.H.C. Screw 3/8-16x4	1	1	1
195	14032 Nut, Conelok 5/8-18	1	1	1
196	15311 Key 3/16 Sq. x 7/16	1	1	1
197	15108 Flange, Fixed Driven	1	1	1
198	15107 Flange, Movable Driven	1	1	1
199	12790 Roll Pin	1	1	1
200	15134 Bearing	1	1	1
201	15130 Sleeve, Driven T.C.	1	1	1
202	15127 Spring, Driven T.C.	1	1	1
203	15782 Wear Block	3	3	3
204	15298 Ramp, Fixed T.C.	1	1	1
205	15157 Key 3/16 Sq. x 7/32	1	1	1
206	30343 Washer	4	4	4
207	10058 Bearing	2	2	2
208	30375 Jackshaft	1	1	1
209	30371 Sprocket 10 Tooth - Key Way	1		
	30372 Sprocket 11 Tooth - Key Way		1	1
210	10160 Nut 3/16 Sq. x 3/4	1	1	1
211	14033 Nut, Conelok 5/18-18	1	1	1

PARTS LIST **WIRING DIAGRAM (model with lighting system)**

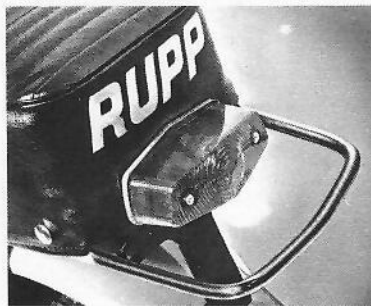


MAINTENANCE CHART

ITEM	SERVICE INTERVAL
Chain Adjustment	Check Daily
Chain Lubrication	Check Daily. Lubricate every 50-100 miles
Engine Crankcase Oil Level	Check Daily. Add as required. Replace every 25 hours or when oil becomes dirty.
Oil Throttle Assembly	Every 50 hours, at twist grip and engine
Brake Adjustment	Check every 25 hours, adjust as required
Oil Brake Actuating Stud and Brake Lever Pivot Points	Every 25 hours
Front Forks	Every 100 hours
Oil Steering Column Bearings	Every 100 hours

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Check Air Cleaner Element	Every 25 hours or sooner if operated under dusty conditions. Clean or replace as necessary.	Air Cleaner	7, 13	Parts	22-25
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