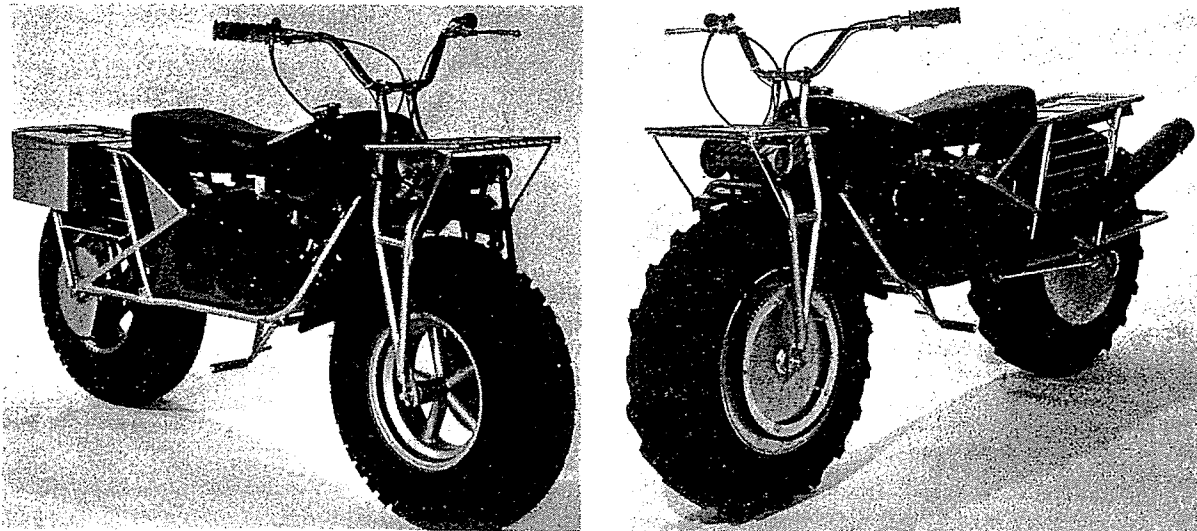


ROKON

MOTOTRACTOR



OWNERS

OPERATION AND MAINTENANCE

MANUAL

American Engineered and Manufactured

U.S. and Foreign Patents Pending

Rokon International

50 Railroad Avenue Rochester NH 03839

Tel 603 335 3200 Fax 603 335 4400

OPTIONAL ACCESSORIES

RANGER AND SCOUT

Alternator light kit
Rear passenger seat
Tool box kit
Emergency spare part and tool kit
Air filter, foam type washable
Air gauge
Battery light kit
Bumper rack
Horn
Golden Spectro oil
Sprocket cleaners
Mirror Assembly
Fully illustrated parts manual
All purpose trailer, 12 cu. ft.
Spreader
York rake
Moldboard plow
3-Point hitch
1500 watt alternator
Agri-fogger
Double gang disc harrow
Soil cultivator
Agri-sprayer
Left side PTO kit
Swivel hitch
Rapid hose lay

PROCEDURE FOR LUBRICATING
ROKON RANGER AND SCOUT

1. Wheel drive chains should be lubricated daily or as required with any good chain lubricant.
2. Brake disc bushing that moves on the miter box shaft or transmission shaft, should be lubricated daily or as required with chain lube.
3. Brake cams in the brake assembly that move the moveable brake puck should be lubricated daily or as required with chain lube.
4. King pin bolts & bushings should be well lubricated daily or as required with chain lube.
5. Override spring should be lubricated monthly with chain lube. The hole for the lubrication point is located under the seat in the main tube.
6. Transmission. Check monthly or if leakage is detected. Keep at level of middle plug in rear of housing. Replenish with EP80 - 90 gear lube.
7. Miter box. Check monthly or if leakage is detected. Keep at shaft level. Replenish with EP80 - 90 gear lube.

SUPPLEMENTARY SERVICING

1. Engine life and performance is directly proportional to the cleanliness of the air filter. Clean daily if needed.
2. The final drive chain should be adjusted after the first four hours of use to take up any initial wear.
3. After operation in deep mud, wash all drive chains and sprockets to keep the machine from locking up when the mud solidifies.
4. CAUTION: To avoid breakage, tighten the carburetor elbow retaining screws evenly. Alternate from one screw to the other and do not over-tighten.
5. Never operate vehicle without the head deflector on the exhaust manifold.

OPERATING INSTRUCTIONS

This section describes and locates the various controls provided for the proper operation of the vehicle.

CONTROLS

Starter. The Rokon Ranger and Rokon Scout engines have a rope type rewind starter located on the engine cowling. Before attempting to start the engine, be sure to have the gear shift lever in neutral position, which is found between low and second or between second and third. (3-N-2-N-1)

Brakes. The Rokon Ranger and Scout are equipped with separate front and rear disc brakes. The front and rear wheels are controlled by the brake lever on the right handlebar and the rear only is controlled by the brake lever on the left handlebar. The right hand lever has a parking brake feature.

Operation of the Ranger and Scout on steep slopes. Always descend steep grades in control. Be careful using the front brake down steep hills. Use the rear brake freely. Keep the torque converter engaged. Descend in the gear you would climb up in.

Throttle. The engine is accelerated by twisting the throttle grip counter-clockwise. The throttle grip is spring-loaded and it will automatically close the throttle and slow the engine when released.

Transmission. The three range transmission is a ratio range selector and when coupled with the automatic torque converter gives the vehicle extremely broad capabilities from steep climbing to normal transporting.

The torque converter provides a large overlap of speed and torque between gears. This makes frequent gear changes unnecessary. Therefore, the transmission has not been designed to be shifted in motion. Stop before shifting. Feel the gears into engagement, rocking the bike if necessary to synchronize the gears. The shift pattern is out for low: 3-N-2-N-Low

Automatic Torque Converter. The torque converter is designed especially for the Mototractor and provides smooth automatic neutral, clutching, and ratio changing in response to throttle control and terrain requirements.

The front drive pulley tends to shift into high as engine speed is increased. The rear driven pulley follows this speed change. If torque requirements increase, the cam in the torque-sensing rear pulley overrides the front pulley and forces a down shift without a loss of engine revs and power.

GENERAL MAINTENANCE

Air cleaner. Under ordinary operating conditions, the air cleaner should be cleaned weekly. Under extremely dusty conditions, more frequent cleaning is necessary. The repair of an engine damaged by dirt is not covered by the warranty.

To clean the element, remove it from the machine. Shake it clean, or force air through the element from the inside out. Make sure the element is seated properly when replaced. There should never be evidence of dirt inside the air intake.

Carburetor adjustment.

1. Turn both adjustment needles clockwise until completely closed. CAUTION: Do not force needles tightly closed, as the seats will be damaged.
2. Open both needles by turning counter-clockwise 1-3/4 turns.
3. Start engine as described under "Starting Procedure" and allow it to warm up. Adjust the idle needle first. Accelerate quickly to approximately 4000 rpm. If the engine bogged down, and accelerated slowly, turn the idle needle clockwise until performance is acceptable. If the engine stalled on take-off, turn idle needle counter-clockwise until performance is satisfactory. The average idle needle adjustment is one turn open.
4. Adjust the high speed needle next. Turn the high speed needle clockwise until four-cycling stops...DO NOT go any finer on the high speed adjustment as piston seizure can occur at high speed. The minimum high speed needle adjustment is 3/4 turn open. For sustained high speed, full throttle operation use 1-1/8 turn open.
5. If the engine runs too fast at idle speed, turn the idle stop screw counter-clockwise until the desired idling speed is obtained. To increase idling speed, turn the idle stop screw clockwise.
6. Normal setting is low speed Jet-L (1) turn, high speed Jet-H (7/8) turn.

Magneto

1. Breaker point gap must be maintained at .015". Set points with cam follower at highest point of breaker cam. Keep wiper felt lubricated.
2. If the magneto stator plate is loosened or removed for any reason, the timing and breaker point adjustment must be rechecked.
3. Keep stator plate in the mid position.

TRANSMISSION MAINTENANCE

Shifting. CAUTION: Do not speed shift as you may damage transmission. Slip gears into position when stopped. If necessary, rock the bike to align the gears.

Lubrication. The transmission is filled with lubricant at the factory. After running-in the vehicle for about 100 miles, it is advisable to drain the break-in lubricant and refill to the middle level-checking plug with about 6 ounces of EP80 to 90 gear lube. Clean the magnetic drain plug. Check the level at the middle plug every 500 miles or if leakage is detected.

REPAIRING PULL STARTER

Remove starter from engine cowling. To release the tension on the rewind spring, hold the rotor, cut the cord and release the tension very easily. Remove the center snap ring, large washer, brake spring, brake fiber washer, friction shoe assembly, and second brake washer. Rotate rotor back and forth and lift easy so that the rewind spring does not fly apart.

Wash all parts in solvent, except fiber washers and replace worn or broken parts as required.

Reassembly. Place the rotor with the friction shoe stops facing the palm of your left hand. Wind the cord clockwise all the way onto the rotor. Add a couple drops of oil to the rewind spring and center shaft in the cover.

CAUTION: Do not use too much oil on the center shaft as it will get on the fiber washers and cause failure.

With the cord installed, slide the rotor over the center shaft and turn back and forth until the rotor falls and locks into the rewind spring. At this point, turn the rotor counter-clockwise approximately 3 full turns to wind up the spring. Feed the cord through the slot in the cover and through the T handle.

Replace the other parts in the same manner as described in dismantling them.

To check to see if the friction shoe assembly engages, pull the cord out about 6". The levers on the friction shoe assembly should move outward to engage the cup. If they don't, dismantle and turn the friction shoe assembly over or replace.

FRONT WHEEL DRIVE - DESCRIPTION AND SERVICE

The power for the front wheel is obtained by means of a driveshaft system running through the upper frame tube.

At the front end of the transmission, between the driveshaft and the miter box, there is an overrunning type clutch. The purpose of this overrunning clutch is to allow the front wheel of the machine to follow its own path in a turn.

The front end of the driveshaft is supported by a sealed ball bearing located just in back of the fork pivot point.

To disassemble the driveshaft and overrunning clutch, it is necessary to remove the seat and transmission.

Drive pin out through hole and the overrunning clutch assembly will remain. Now the transmission can be removed. Before reassembly, the overrunning system should be lubricated with a heavy grease.

Front fork mounting kingpin bolt. The kingpin bolts have Allen set screws locking them. It is important that the kingpin bolts be tightened to 50-55 foot pounds of torque before the set screws are locked. If these bolts should loosen during vehicle operation, the threads will wear out in the frame.

CAUTION: It is very important that these kingpin bolts be checked during normal daily service. This will insure they remain tight at all times.

FINAL DRIVE CHAIN ADJUSTMENTS

The drive chains require adjustment at intervals, depending upon the mileage and the care which the operator has given the chains. Initial wear must be taken up by adjustment after the first few hours of use. Total deflection should be 1/2" to 3/4" when measured midway between the two sprockets of the most loose position.

To adjust the chains, loosen the axle bolts and the adjusting bolt lock nuts, and turn the adjusting bolt in or out as required to give the chain the proper setting. After adjusting the chain, rotate the wheel and check to make sure the chain is aligned properly.

Periodically, the chains should be removed from the machine and cleaned in solvent and relubricated. They should be lubricated with one of the chain lubricants on the market which can be applied to the chain in a liquid form and will penetrate to the inner parts of the rollers.

FRONT MITER BOX

The miter box should not require service other than checking the oil level or replacing oil seals. The miter box should be removed and oil changed yearly.

The miter box is assembled with special tooling to determine the correct tooth engagement and backlash. It is, therefore, advisable not to attempt to dismantle the unit.

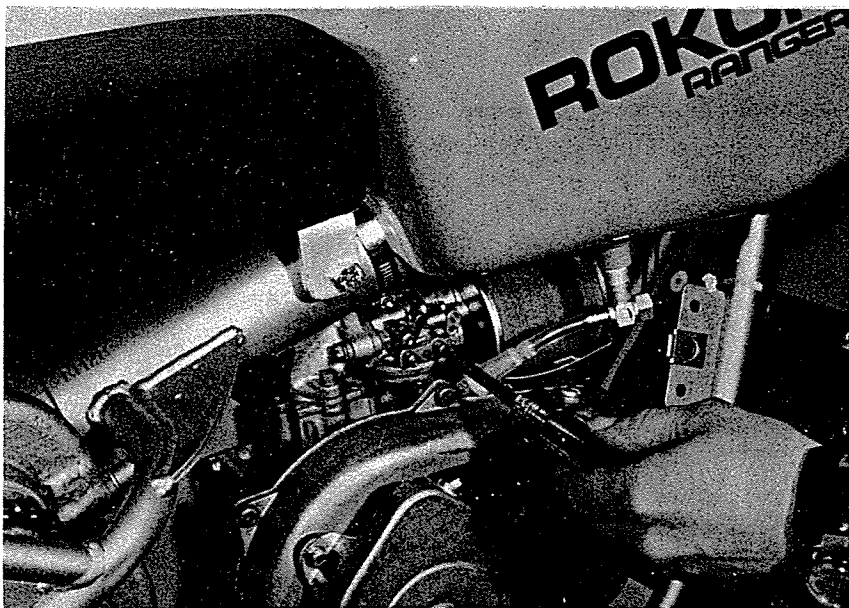
The correct oil level is shaft level. Use EP80 to 90 gear lube.

TIRES

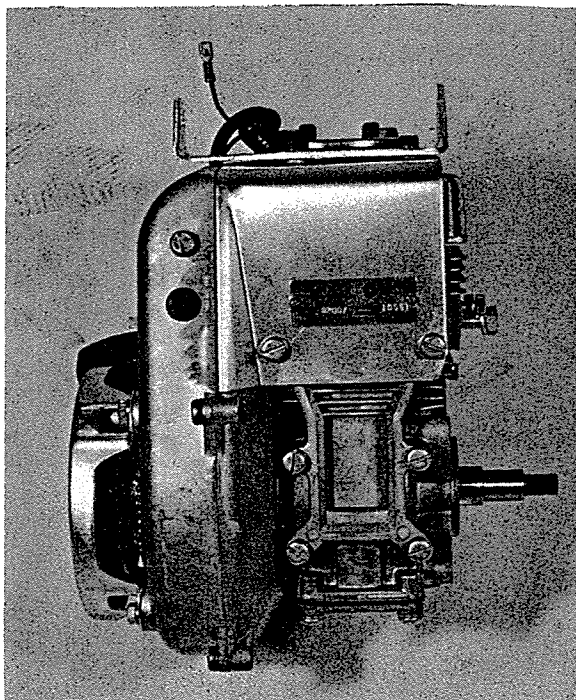
1. Tires on Rangers are all tube type.
2. Tires on Scouts are tubeless.
3. Use normal repair procedures.
4. Reseat the tire beads with 40 pounds of air, but then deflate to the 3½ lbs. recommended operating pressure. NOTE: Correct tire pressure of 3 to 3½ lbs. is very important for good riding and handling.

SAFETY PRECAUTIONS

1. Travel together in remote areas.
2. Put the ball of the foot on the foot rest instead of the instep.
3. Carry first aid supplies.
4. Do not run over unfamiliar terrain at high speed.
5. Pre-plan your route before attempting to negotiate difficult terrain.
6. Wear boots, gloves, eye protection and a helmet.
7. Disconnect the spark plug before attempting to adjust or repair the engine or primary drive.
8. Descend steep slopes at slow speed in low range.
9. Carry a tool kit and emergency spare parts.
10. NEVER OPERATE YOUR ROKON RANGER OR ROKON SCOUT WITHOUT THE ENGINE FAIRINGS AND ALL SAFETY GUARDS INSTALLED.



The serial number is stamped into the main frame under seat.



The engine number is on the plate attached to the engine fan housing.

Be sure to check serial and engine numbers against those on your certificate of origin papers. When ordering parts, always include these numbers.

TROUBLESHOOTING

PROBLEM

GENERAL

PROBABLE CAUSE

- | | |
|---|---|
| 1. Twist grip sticks. | Improperly adjusted throttle lock screws.
Twist grip end rubbing on handlebar.
Deposit build-up under twist grip.
Worn or broken twist grip or throttle cable.
Throttle linkage improperly adjusted.
Moisture under grip freezing in cold weather. |
| 2. Chains loosen frequently. | Improperly seated chain adjustment bolts.
Loose axle bolts.
Improper chain alignment.
Chains need lubrication.
Twisted or distorted chains. |
| 3. Excessive end play in wheel. | Loose axle bolts.
Improper axle or wheel spacer thickness.
Defective wheel bearings.
Distorted bearing retainer housing in wheel. |
| 4. Chain scoring tire sidewall. | Improper chain alignment.
Improper axle spacer thickness.
Defective wheel bearings.
Sprung or broken forks. |
| 5. Noisy driveline. | Driveline improperly seated.
Worn or broken override spring.
Worn or broken carrier bearing or bearing retainer.
Worn bosses leading into override spring.
Worn universal joint. |
| 6. Noisy front miter box. | Low oil level.
Loose gearbox mounting bolts.
Worn or broken bevel gears.
Worn shaft bearings.
Improper gear mesh. |
| 7. Rear wheel won't drive. | Drive chain off sprocket.
Loose belt.
Defect in transmission. |
| 8. Front wheel won't drive. | Wheel chain off sprockets.
Broken roll pin in sprocket.
Broken override spring on driveline.
Worn bosses leading to override spring.
Defective miter box.
Defective transmission. |
| 9. Engine stalls when machine stops. | Improperly adjusted carburetor.
Improperly adjusted throttle linkage. |
| 10. Valve core disappears within wheel. | Tire pressure too low.
Tire bead slipping on knurled drum.
Suggestion: Order tube w/threaded valve stem and nut. Available at factory. |

TROUBLESHOOTING

ENGINE

<u>PROBLEM</u>	<u>PROBABLE CAUSE</u>
1. Engine will not start.	No fuel in tank or shut-off valve closed. Spark plug not firing. Fuel not being delivered to combustion chamber. Engine flooded. Too much fuel in combustion chamber.
2. Engine hard to start.	Water or dirt in fuel, stale fuel mixture, or too much oil in fuel. Weak ignition spark. Engine over or under chocked. Carburetor out of adjustment Gasket or seal leaks. Open or broken reed. Spark plug fouled.
3. Engine starts but will not continue to run.	Insufficient fuel supply. Fuel line clogged. Carburetor out of adjustment. Vent screw on filler cap closed. Faulty fuel pump or dirty carburetor. Air leak in fuel system. Defective or fouled spark plug.
4. Engine misses.	Dirt in fuel system. Carburetor out of adjustment. Spark plug fouled or defective. Faulty magneto.
5. Engine lacks power.	Air cleaner clogged. Carburetor not adjusted properly. Incorrect spark plug. Incorrect ignition timing. Worn or stuck piston rings or leaky head gasket.
6. Engine overheats.	Engine overloaded. Carburetor adjustment too lean. Insufficient oil in fuel. Incorrect spark plug. Ignition timing over-advanced. Scored piston or cylinder wall.
7. Engine noisy or knocking.	Loose flywheel. Worn bearings. Broken or loose parts inside engine.
8. Engine stalls under load.	Carburetor adjustment too lean. Fuel line restricted or tank vent closed. Faulty fuel pump. Engine overloaded.
9. Poor acceleration.	Carburetor out of adjustment. Air cleaner clogged. Chipped or broken reeds. Ignition timing over-advanced. Leaking gaskets.

TROUBLESHOOTING
ENGINE

<u>PROBLEM</u>	(2)	<u>PROBABLE CAUSE</u>
9. Poor acceleration. (cont'd)		Exhaust restriction. Poor compression.
10. Poor high speed performance.		Carburetor out of adjustment. Low compression. Pre-ignition.