



OWNER'S MANUAL 1996

Updated 02/2015

2 STROKE

ATK

Thank You . . .

. . . for purchasing an American-made ATK motorcycle. ATK is committed to building the highest-quality, best-handling off-road motorcycles in the world.

Prime examples of that commitment are readily visible on every ATK model: Beautiful components such as machined-from-billet aluminum hubs and triple clamps, Protaper handlebars, 4130 chrome-moly steel frames and swingarms, premium-quality O-Ring drive chains, Ceet seatfoam and covers, and maintenance-free rear suspension systems are features you won't find on any competing brand of off-road motorcycle.

Using beautiful, high-quality parts provides more than pleasure for the eyes,

though. They insure that, given minimal care and maintenance, an ATK motorcycle will provide years of trouble-free off-road pleasure.

Thus, we urge you to read this manual--it's easy to digest--and to visit your ATK dealer if you have any bike problems, need advice or replacement parts or accessories.

Thanks again for buying an ATK. Have fun.

Sincerely,

Michael L. Tullis

C.E.O., ATK America.

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INTRODUCTION

Congratulations on your purchase of America's finest off road motorcycle: The ATK.

This manual explains operation, inspection, basic maintenance and tuning of your machine. If you have any questions about this manual or your machine, please contact your local ATK dealer.

WARNING

Please read this manual carefully and completely before operating this machine. Do not attempt to operate this machine until you have attained a satisfactory knowledge of its controls and operating features and until you have been trained in safe and proper riding techniques. Regular inspections and careful maintenance, along with good riding skills, will ensure that you safely enjoy the capabilities and the reliability of this machine.

IMPORTANT NOTICE

This machine is designed strictly for competition use, on a closed course. It is illegal for this machine to be operated on any public street, road, or highway. Off road use on public lands may also be illegal. Please check local regulations before riding.

SAFETY INFORMATION

1. This machine is to be operated by an experienced rider only. Do not attempt to operate this machine at maximum power until you are totally familiar with its characteristics.
2. This machine is designed to be ridden by the operator only. Do not carry passengers on this machine.
3. Always wear protective apparel. When operating this machine, always wear an approved helmet with goggles or a face shield. Also wear heavy boots, gloves, and protective clothing. Always wear proper fitting clothing that will not be caught in any of the moving parts or controls of the machine.
4. Always maintain your machine in proper working order. For safety and reliability, the machine must be properly maintained. Always perform the pre-operation checks indicated in this manual. Correcting a mechanical problem before you ride may

prevent an accident.

5. Gasoline is highly flammable and can cause injury or death. Always turn off the engine while refueling. Take care to not spill any gasoline on the engine or exhaust system. Never refuel in the vicinity of an open flame, or while smoking. If you should swallow gasoline, inhale excess gasoline vapors, or allow gasoline to get into your eyes, contact a doctor immediately.

6. Only operate the machine in an area with adequate ventilation. Exhaust fumes are poisonous. These fumes contain carbon monoxide, which by itself is odorless and colorless. Carbon monoxide is a dangerous gas which can cause unconsciousness or can be lethal.

7. Park the machine carefully.

8. Properly secure the machine before transporting it. When transporting the machine in another vehicle, always be sure it is properly secured in an upright position and that the fuel cock is in the 'off' position. Otherwise, fuel may leak out of the carburetor or fuel tank. For transporting we recommend **The Bike Shoe**, available from your ATK dealer.

SPECIFICATIONS

Model	ATK 406/250
Displacement	399/248cc
Engine type	Air-cooled/two-stroke Single
Bore and stroke	84.0 x 72.0/72.0 x 61.0cc
Compression ratio	10.1/12.5:1
Carburetion	38mm Mikuni TMS / 36mm Mikuni TMX
Ignition	Motoplat 42w
Spark plug	NGK B8ES
Transmission	wide-ratio 5-speed/ wide-ratio 6-speed
Starting system	kick
Fuel capacity	4.2 gallons
Fuel requirements	90 + octane
Wheelbase	58.5 inches
Rake/trail	26.5 degrees/ 4.3 inches
Seat height	37.5 inches
Ground clearance	13.5 inches
Footpeg height	16.0 inches
Footpeg to seat top	21.3 inches
Swingarm length	21.5 inches
Front tire	80/100-21
Rear tire	110/100-18
Tire pressure	front and rear 14-20psi
Front wheel travel	11.8 inches
External adjustments	compression & rebound damping
Standard spring rate	0.42 Kg / mm
Rear wheel travel	12.6 inches

External adjustments	compression & rebound damping, spring preload
Standard spring rate	4.2 Kg / mm
Front brake	Nissin dual piston, 9.0-inch stainless-steel rotor
Rear brake	Nissin dual piston, 8.7 inch stainless-steel rotor
Final drive ratio	15-50 or 15-48
Drive chain	D.I.D. 520 VS O-ring

Internal gear ratios:

406		
Primary drive	25/65	2.600
1st	32/12	2.667
2nd	28/15	1.867
3rd	21/15	1.400
4th	19/17	1.118
5th	21/23	0.913
250cc		
Primary drive	23/67	2.913
1st	34/10	3.400
2nd	30/13	2.308
3rd	27/16	1.688
4th	25/19	1.316
5th	23/21	1.952
6th	21/22	0.955

Weight, wet no fuel:

406	230 pounds
250	225 pounds

Recommended transmission oil	Spectro 10/40 winter/ 20/50 summer
Oil capacity 406/250	1 quart
Recommended two-stroke oil	Golden Spectro
Fuel/oil mixing ratio	62:1
Brake fluid	Bel-Ray DOT 5

ADJUSTMENTS

Rear suspension:

Rear suspension sag is preset at the factory for a rider of approximately 180 pounds. But it should be rechecked for optimum performance. To set the sag, place the bike on a stand or box that lifts the rear wheel clear of the ground, then measure the distance from the center of the rear axle to the center of the seat-mounting bolt and record that number. Next, put the motorcycle on the ground and bounce on it a few times to loosen up the shock and swingarm pivots. With the rider sitting on the bike in his normal riding position, one foot on the ground for balance, have an assistant remeasure the distance from rear axle bolt center to the seat mount bolt and record that number. The difference in measurements should be exactly 101.6mm (4.0 inches).

If adjustment is needed, loosen the shock-spring's locking ring then rotate the shock spring by hand to increase its preload. Lessen the preload if more



sag is needed. After rechecking the sag measurement, tighten the locking ring firmly using a spanner wrench or drift punch and hammer.

Shock compression damping:

Compression damping controls the speed at which the shock compresses. The compression-adjuster knob is located on the top of the shock's reservoir. Moving the knob to a higher number increases the shock's compression resistance and slows the shock's rate of compression. Choosing a lower number reduces resistance to compression and provides a softer ride.



Shock rebound damping:

Rebound damping controls the speed at which the shock returns to its extended length after being compressed. The rebound-adjuster knob is located below the shock spring, just above the shock's lower mounting bolt. A higher number increases damping resistance and slows the shock's return after being compressed. A lower number decreases resistance and lets the shock return faster.



Fork compression damping:

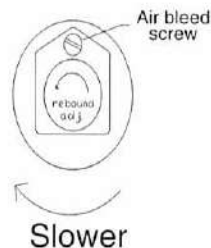
The fork's compression damping adjustments are located on the lower outside of the bottom fork legs. Like the shock's adjustments, a higher number provides a firmer ride by increasing compression resistance, and a lower number decreases resistance which results in a softer ride. A small flatblade screwdriver is required to adjust the fork compression damping.



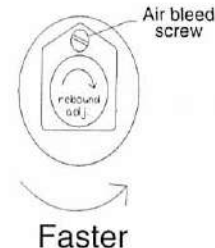
Fork rebound damping:

The fork's rebound damping is adjusted via a plastic knob on top of each fork leg. Turning the thumb screw adjuster clockwise increases resistance and slows the fork's rebound speed after being compressed. Turning the knob counter clockwise reduces resistance and lets the fork return to full extension quicker.

Top View



Top View



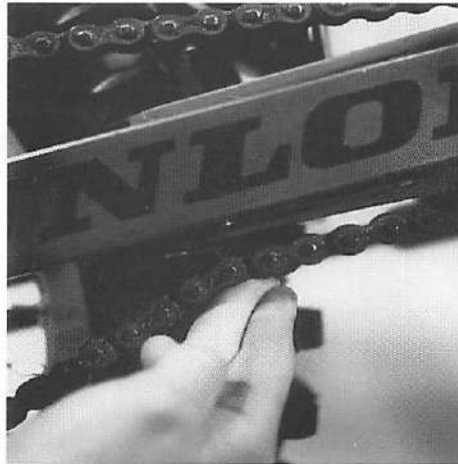
Fork air bleed:

A small screw located on the top of each fork cap, next to the rebound damper adjustment, relieves built-up air pressure in the fork. A small flatblade screwdriver is required.



Drive chain adjustment:

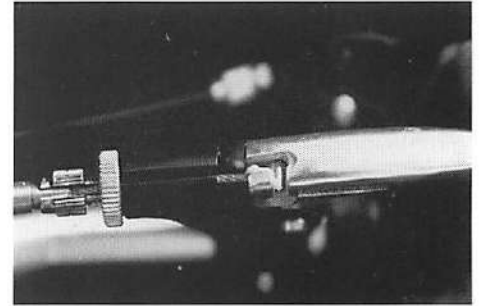
The drive chain's adjustment should be checked after each ride. With the bike on a stand, push the bottom of the chain up towards the lower end of the chain rub pad. The chain should become tight when approximately 1/4 inch away from the swing arm. If adjustment is required, loosen the rear axle nut and adjust the chain tension by turning the axle-adjuster screws. After adjustment, retighten the adjuster screw locknuts and the axle firmly.



Chain alignment is also very important to long chain and sprocket life. While on a stand, place a screwdriver shaft between the upper part of the chain and the rear sprocket, then turn the rear tire slowly rearward until the top of the chain becomes taut. Sight down the top of the chain. It should appear straight. If it looks curved, make the necessary corrections using the adjuster screws and recheck the adjustment and axle nut tightness.

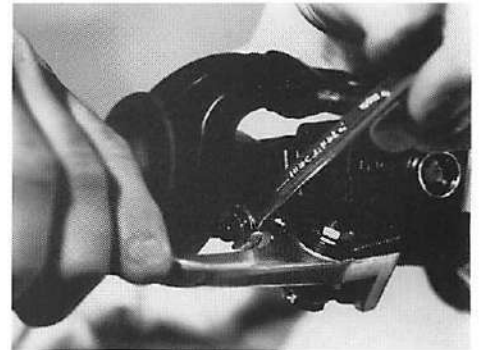
Clutch lever:

The clutch lever should be adjusted to provide 1/4 inch of freeplay at its ball-end.



Front brake lever:

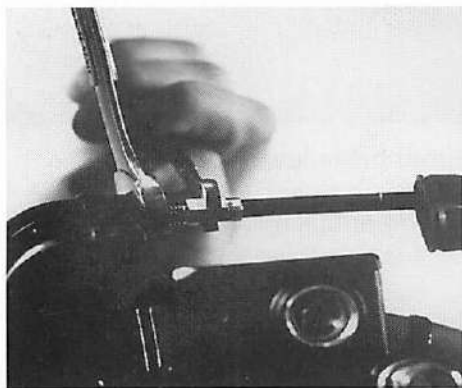
The front brake level is provided with an adjuster on its front side that allows



adjustment of the brake's engagement point. It should be adjusted to the rider's preference.

Throttle:

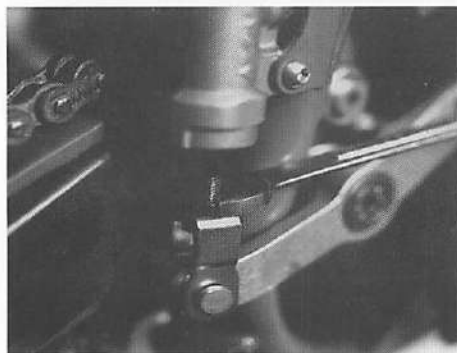
The throttle should have a small amount of freeplay in it. The adjustment is located under the rubber cover between the throttle assembly and throttle cable.



Rear brake pedal:

The rear brake pedal can be adjusted for static height and for travel before braking begins. The pedal's static height (position before being pushed)

is adjusted via a bolt on the pedal's backside. After making the static height adjustment, the pedal's engagement point should be adjusted to rider preference. The engagement point is adjusted by loosening the locknut on the top of the clevis and then turning the master cylinder push shaft in or out. After adjusting, be sure the cle-



vis locknut is retightened and there is a slight amount of freeplay in the brake pedal prior to the push shaft being moved.

Handlebar adjustment:

The Protaper handlebar can be adjusted for height and reach. To lower the handlebar, loosen the four handlebar clamp bolts, then rotate the bar reward to lower its height and decrease the reach. Rotate the bar forward to raise its height and increase its reach. A scale printed on the top-center section of the handlebar provides a reference for adjustment. After adjusting the handlebar position, retighten the handlebar clamps, starting with the front bolts followed by the rear bolts.



STARTING PROCEDURES

Fuel petcock:

The fuel petcock, located on the lower right rear of the fuel tank (seated on the bike) has three positions: OFF/ON/RESERVE. When the lever arm is pointing toward the engine, it is in the RESERVE position. The lever pointing at the ground is ON, and when the lever is pointing toward the right side it is OFF.

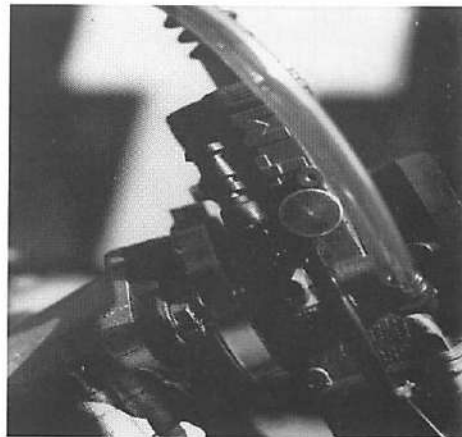


Cold engine:

- 1) Turn the fuel petcock to ON.
- 2) Pull the choke knob up until it stops.

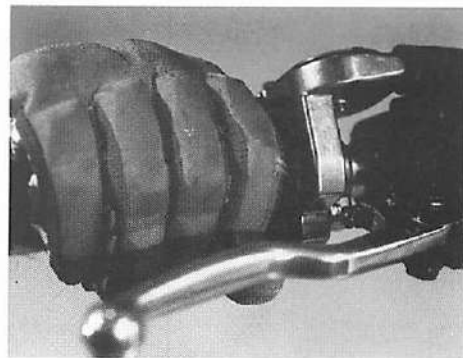


- 3) Kick the engine over briskly with the throttle closed. After the engine warms to operating temperature, push the choke down until it stops.



Warm engine:

- 1) Kick the engine briskly with the throttle opened about 1/8 to 1/4 turn.



Engine Stop:

- 1) Push the black kill button on the left side of the handlebar.



SUSPENSION

Fork oil:

Your new ATK's fork is supplied with 5-weight suspension fluid. 7.5-weight fluid may be substituted if a firmer ride is desired. Use only a high-grade suspension fluid such as Bel-Ray HVI or Spectro.

Fork oil level:

Minimum level	6.77 inches (172mm)
Maximum oil level	5.51 inches (140mm)
Stock oil level	5.51 inches (140mm)

Effects of oil level:

Raising the fork oil level increases the fork's resistance to bottoming and generally makes the suspension feel stiffer during the last half of its travel.

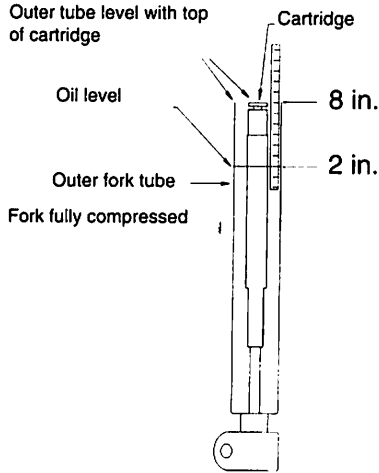
Lowering the oil level softens the last half of the travel.

Setting the fork oil level:

The fork legs must be removed from the motorcycle to accurately set the oil level. Prior to fork removal, the forks caps should be loosened (after loosening the top clamp's pinch bolts).

- 1) Remove the fork legs and one fork cap.
- 2) Push the outer tube down a couple of inches and remove the spring-retainer clips and the spring preload spacers.
- 3) Slowly remove the fork spring from the fork.
- 4) Push the damper cartridge and outer tube to the bottom of their travel, then raise the outer tube's top edge flush with the top of the damper cartridge top.
- 5) Insert a narrow, steel rule into the fork between the damper cartridge and the wall of the outer tube, stopping at the 8-inch mark on the rule.
- 6) Carefully remove the rule and note

the oil height on it. Subtracting the oil mark number from 8 gives the oil level.



Fork-spring preload:

Fork-spring preload refers to the distance the spring is compressed when it is installed in the fork with the fork fully extended.

Effect of spring preload:

Spring preload effects the motorcycle's ride height. Increasing the spring preload raises the ride height of the

bike and makes the fork feel slightly stiffer during the initial part of its movement. Generally, a lower fork-spring preload is advisable.

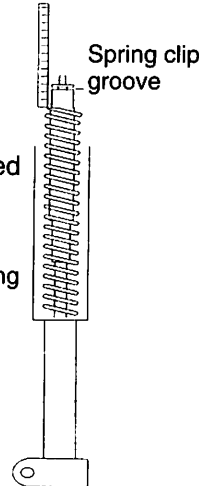
The recommended fork-spring preload is 10 mm.

Setting the fork-spring preload:

- 1) Follow steps one and two under Setting the fork-oil level.
- 2) Holding the damper cartridge fully extended, measure the distance from

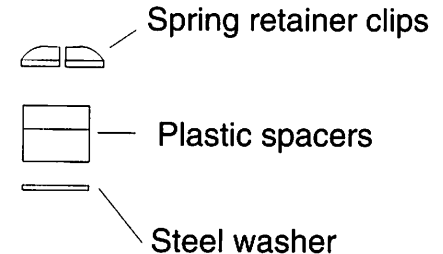
Cartridge fully extended

Spring preload setting
10 mm



the bottom of its spring-clip groove to the top of the fork spring and record that number.

- 3) Add the amount of spring preload desired to the number derived in (2), (above) to determine the length of the preload spacer.



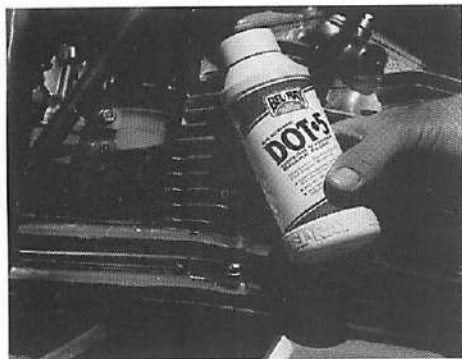
BRAKES

Nissin hydraulic brake components are used on your new ATK. The dual-piston front and rear calipers are exactly the same, as are their brake pads. Using a dual-piston caliper on the rear wheel offers several advantages: brake pad life is greatly increased; stopping power is greater; and overheating, even at high-speeds

and during severe use in tight woods, is reduced.

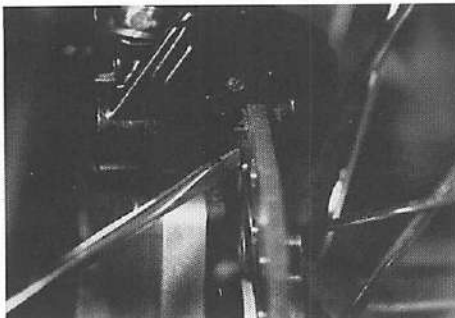
Brake fluid:

Your new ATK's brake system is filled with premium Bel-Ray DOT 5 fluid. DO NOT mix with another brand or rating of brake fluid. If another brand or rating is preferred, completely drain and flush the brake system first.



Brake pads:

Replace the brake pads when the friction pad material is worn to 1/8 inch in thickness. The front and rear brake calipers use the same brake pads.



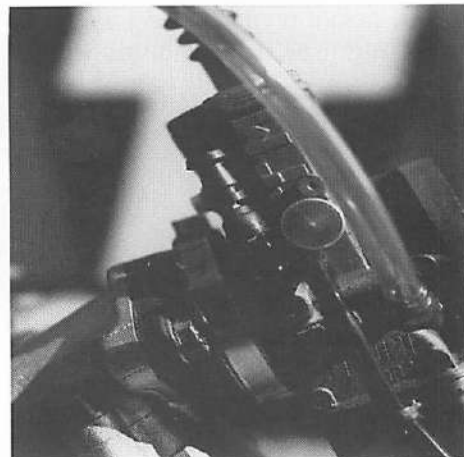
CARBURETION

406:

Type	Mikuni TMS 38
Size	38mm
Main jet	310
Needle	6DGY457
Needle clip position	3
Slide	G
Bleed screw adjustment	1.5 turns

250:

Type	Mikuni TMX 36
Size	36mm
Main jet	310
Needle	6EN11-53
Needle clip position	2
Slide	6.0
Bleed screw adjustment	1.5 turns

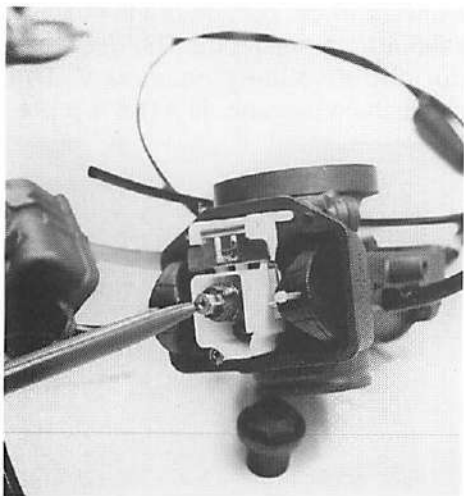


Adjusting the carburetion:

Your new ATK's carburetion is set at our Utah factory which has an elevation of around 4,000 feet. To obtain optimum performance in your riding area, we suggest that an hour or so be set aside to fine-tune the carburetor for your elevation and weather conditions.

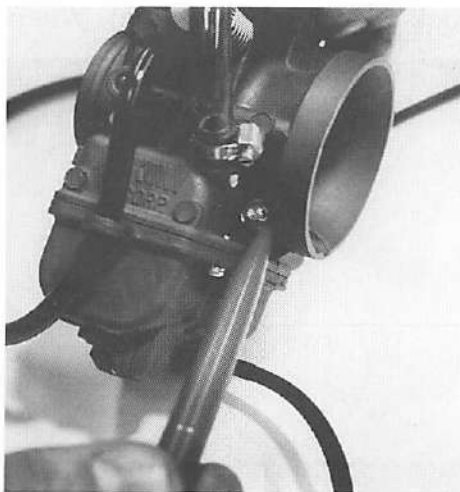
Main jet:

When fine-tuning the carburetor start with the main jet. If the engine sounds rich or lean under full throttle conditions, change the main jet size. The main jet is located under the float bowl. It can be reached after float bowl nut removal which requires a 17mm boxend wrench. Use a jet wrench to remove the main jet and then replace it with a smaller numbered jet if the bike is running rich, a larger one if it is running lean.



Air bleed screw:

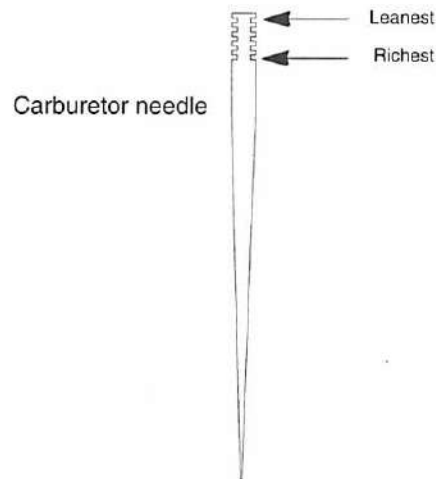
The air-bleed screw should be adjusted for a smooth idle speed. Turning the screw clockwise reduces the amount of air-bleed, counter clockwise increases the amount of air entering the engine at idle speed. Slowly move the screw a half turn clockwise and note the engine's idle speed, then return it to 1.5 turns and then rotate it counter clockwise a half turn, noting the engine speed. If the engine gained speed in one direction return the adjuster to that position.



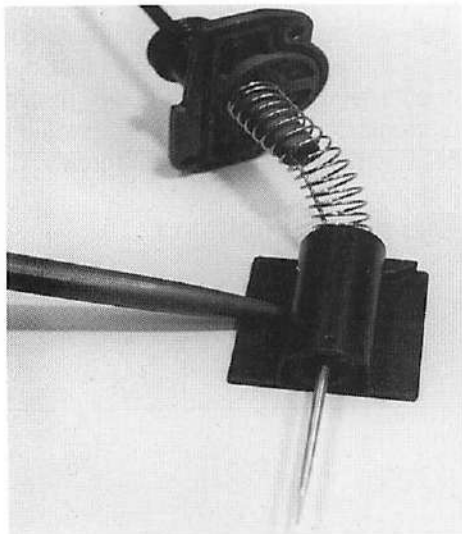
Needle:

The needle is the long, thin, tapered steel part that protrudes out the bottom of the throttle slide. It is reached by removing the carburetor's top. When the top of the carburetor is pulled away from the carburetor body, the throttle-return spring and throttle slide will be attached to it. The needle jet and the jet needle (the part that the needle jet slides up and down in) are responsible for the engine's operation between 1/4 throttle and 3/4 throttle. If

Clip position from top



the engine is running rich in this range, lowering the needle (raising the C-clip at the needle jet's top) will reduce the amount of fuel flow. Lowering the C-clip raises the needle jet and makes the engine richer in this power range.



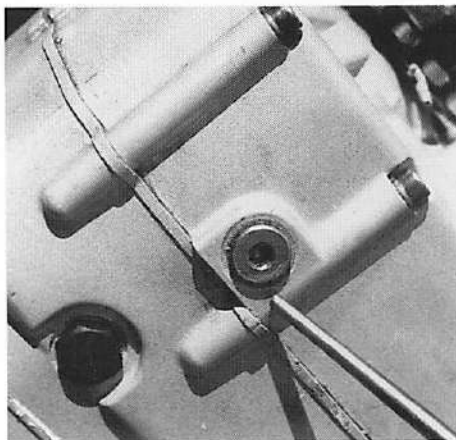
MAINTENANCE

Engine oil:

Summer	Spectro 20-50w
Winter	Spectro 10-40w
Capacity 406/250	1 quart
Oil change	200 miles

Changing the oil:

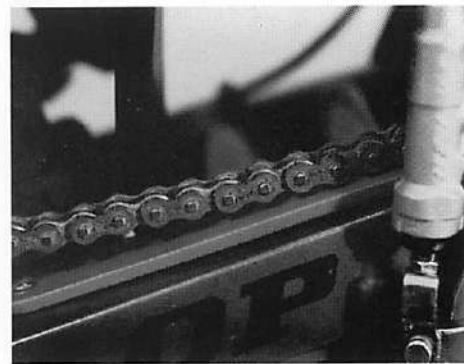
Remove the oil-drain plug from the bottom of the engine using a 6mm allen wrench (Do Not remove the 17mm hexhead plug as it anchors the kick starter return spring). When



drained, replace the plug snugly. Refill the engine after removing the plastic filler plug/vent cap on the top of the engine's center case behind the cylinder.

Drive chain:

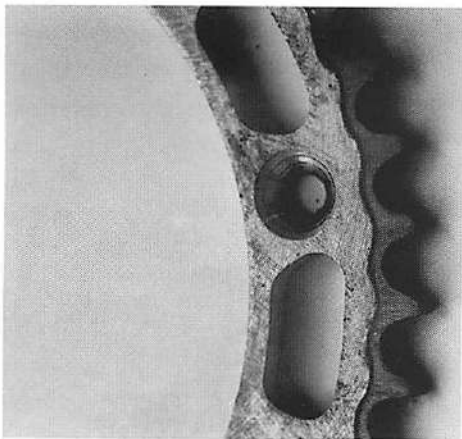
Except for an occasional chain tension adjustment, little chain care is required. As long as the chain's O-rings are in good condition, the lube trapped inside the chain can not escape and lube applied to the outside of the chain can not get into the chain to lubricate its critical parts. A light lubricant to the outside of the chain to keep it from rusting may be desirable, but not absolutely necessary. The stock chain used on all ATKs is a pre-



mium model and should last a long time. When the chain reaches a point where side play is obviously excessive, it should be replaced.

Drive sprockets:

ATK rear sprockets, like the drive chain, are the highest quality available and should provide long life. When the sprocket teeth start looking bent, it's time for a new sprocket. The drive chain should be inspected closely for excessive side play at the same time and replaced if bad. A worn drive chain can wear out a new rear sprocket in one ride.



Control cables:

The control cables should be lubricated periodically with cable lube to keep them working smoothly.

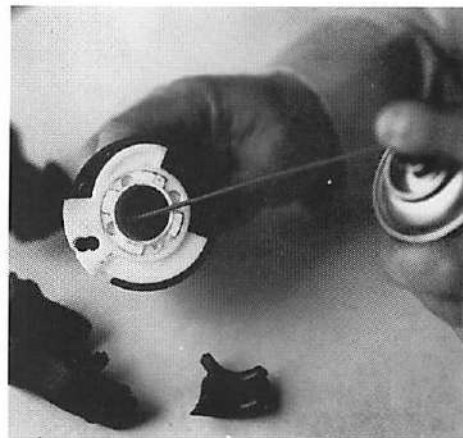


Throttle/control levers:

The throttle should be disassembled, cleaned in cleaning solvent, then all moving parts lubricated, including the holder for the throttle-cable's end. The clutch, front brake and decompression levers should also be cleaned and lubricated at their pivot points and where the cable ends are held. The maintenance schedule for these parts should be determined by the amount and severity of the bike's use.

Rear brake pedal:

The rear brake pedal should be cleaned and greased with a light, waterproof grease when performing other maintenance chores. The rear brake pivot is sealed with an O-ring at each end of its pivot to help retain lubricant and keep water and dirt out. Be sure these O-rings are in good condition and properly positioned before reassembling the brake pedal. A drop of thread sealant should be applied the brake-pedal pivot bolt when it is reassembled.



Brake pads:

The brake pad's thickness should be checked after each ride. The pads should be replaced when they are 1/8 inch thick. The front and rear brake pads are identical.



Ignition:

The electronic ignition is preset at the factory and needs no maintenance.



Air filter:

The air filter should be cleaned in solvent after every ride and re-oiled. To perform this maintenance, remove the seat, then loosen the hose clamp on the back of the carburetor and pull the air filter from the airbox. Regular engine oil or special foam air filter oil may be used to oil the filter. Before

installing the air filter into the airbox, clean the inside of the airbox and apply heavy waterproof grease to the front of the sealing flange on the air filter carrier. Then reinstall the filter, pushing the sealing flange tightly against the front of the airbox while tightening the filter carrier hose clamp to the back of the carburetor.





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