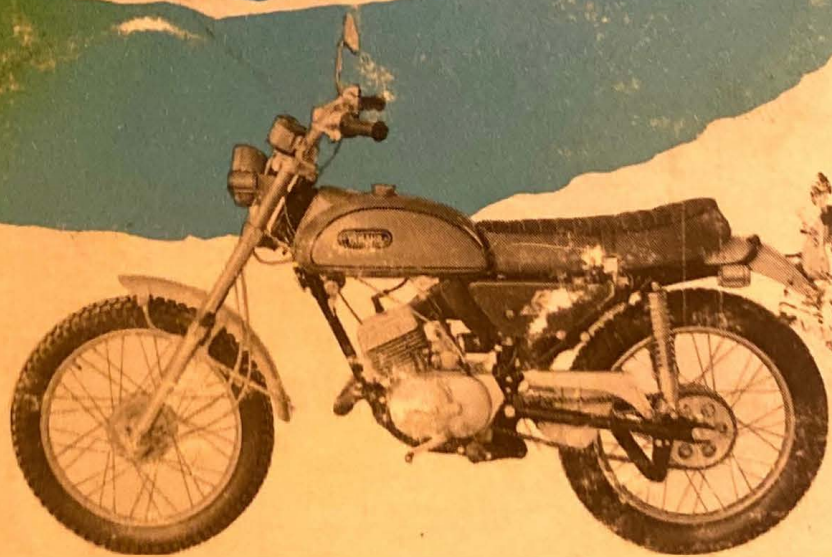


YAMAHA

125 TRAIL AT1

RIDER'S MANUAL

www.legends-yamaha-enduros.com



YAMAHA MOTOR CO., LTD.

(一般向)

The new Yamaha Trail 125 AT1 is designed as a high-performance motorcycle for street or trail.

One of the most attractive design features is that it is easily converted into a genuine scrambler using optional parts available from Yamaha.

This manual provides the owner with the technical information essential to the daily service of his machine.

For the owner interested in motocross scrambles and cross country racing, the last few pages of this manual are devoted to converting the AT1.

The power, high performance, and styling of the AT1 will lead you to a new exciting world wherever you go on the roads, in the woods, or through the fields.



CONTENTS

| | |
|---|----|
| I. Features and Specifications | 3 |
| 1. Features | 3 |
| 2. Specifications | 5 |
| 3. Performance Curves | 8 |
| II. Yamaha Autolube | 9 |
| III. Nomenclature | 10 |
| IV. Basic Instructions | 13 |
| 1. Gasoline and Oil | 13 |
| 2. Familiarization | 13 |
| 3. Pre-operation Check | 18 |
| 4. Operation | 19 |
| 5. Break-in Procedure | 22 |
| V. Service Tools | 23 |
| VI. Inspection and Service | 24 |
| 1. Periodic Inspection Guide | 24 |
| 2. Inspection and Adjustment | 25 |
| VII. Racing | 37 |
| Conversion of the Yamaha AT1 for racing | 37 |
| 1. Engine tune up | 37 |
| 2. Modification of the chassis | 38 |
| 3. Service Data | 39 |
| 4. Change in Specifications | 40 |
| 5. Miscellaneous Notes | 41 |

I. Features and Specifications

1. Features

(1) High-performance Single Cylinder Engine

The Yamaha Trail 125 AT1 utilizes a powerful two-stroke 125 cc engine. The new five-port cylinder, which is another Yamaha. Technical development greatly improves engine efficiency and is responsible for high output throughout a broad power range.

(2) Highly-dependable Yamaha Autolube

Yamaha Autolube not only assures ultra-smooth engine lubrication but also longer service life from the engine.

(3) Easy Starting

The engine can be started by simply disengaging the clutch and kicking the kick pedal without shifting gears back to neutral. This is a valuable convenience to the rider.

(4) Powerful Brakes

Patented waterproof, dustproof brake drums provide safe, fade-free braking on wet or dusty roads.

(5) Adjustable Rear Cushion

The rear cushions are adjustable for three positions. The rider can adjust spring tension to compensate for varying weight, speed, and road conditions.

(6) Front Fork Design

The Yamaha Trail 125 AT1 employs a front fork design well-known for its strength superior handling characteristics. Its use assures the rider of the ultimate suspension for even the roughest terrain.

(7) Speedometer and Tachometer

Both speedometer and tachometer are mounted as standard. Individual units are separately mounted for maximum visibility.

(8) Tires

The Yamaha AT1 is fitted with Dunlop Trials Universal as standard equipment. This particular tread is one of the most versatile available and gives maximum trail traction compatible with road usage.

(9) Carburetor Starter Feature

Yamaha's starter feature is already well-known for its easy starting. Equipped with this unique carburetor, the Yamaha AT1 is quick starting under all conditions.

2. Specifications

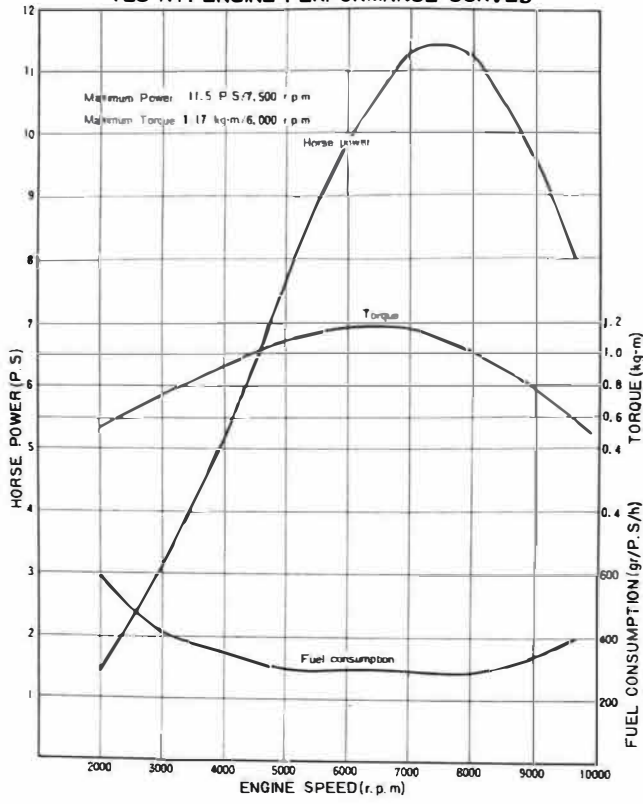
Performance & Specifications Model: AT1

| | |
|--|---|
| Dimensions : | |
| Overall length | 77.2 in. 1,960 mm |
| Overall width | 35.8 in. 910 mm |
| Overall height | 42.9 in. 1,090 mm |
| Wheelbase | 50.6 in. 1,285 mm |
| Min. road clearance | 8.9 in. 225 mm |
| Weight: Gross | 221 lbs 100 kg |
| Net | 207 lbs 94 kg |
| Performance : | |
| Max. speed | 62 mph(100 km/h) or more (std.) |
| Fuel consumption (on paved level roads) | 141.1 mpg (at 25 mph), 60 km/ℓ (at 40 km/h) |
| Climbing capacity | 30 degree |
| Min. turning radius | 75.1 in. 1,900 mm |
| Braking distance | 58.3 ft. @31 mph. 14.8 m @50 km/h |
| Engine : | |
| Model | AT1 |
| Type | 2 stroke gasoline, |
| Lubricating system | Seperate lubrication (Yamaha Autolube) |
| Cylinder | single, 5-port forward inclined. |
| Displacement | 7.51 cu.in. 123 cc |
| Bore × Stroke | 2.205 × 1.969 in. 56 × 50 mm |
| Compression ratio | 7.1 : 1 |
| Max. power | 11.5P.S/7,500 rpm |
| Max. rorque | 8.5 ft-lb/6,000 rpm 1.17 kg-m/6,000 rpm |
| Starting system | Primary-coupled kick starter system |
| Ignition method | Magneto Ignition |

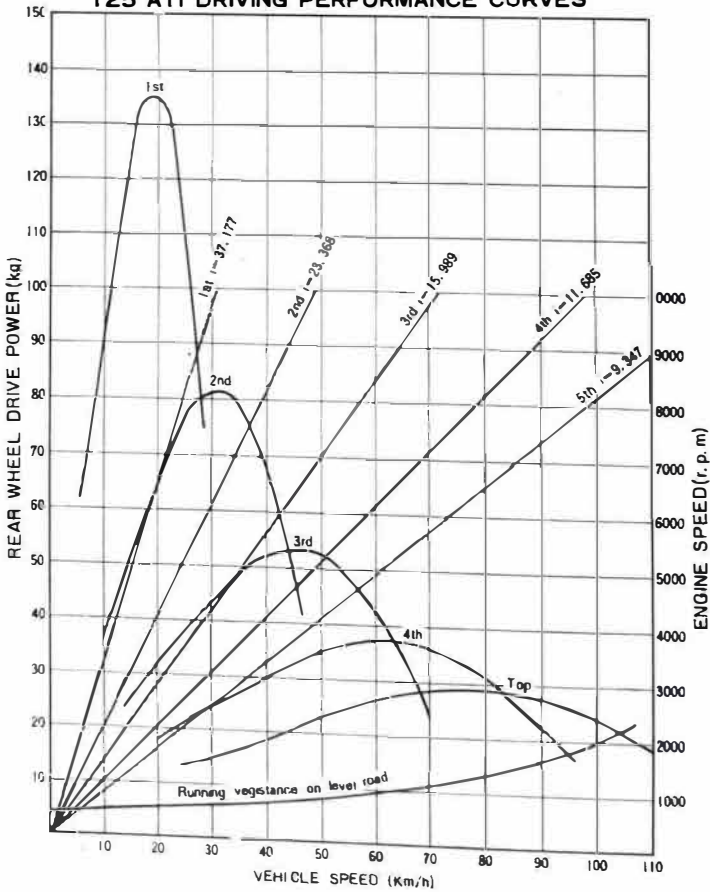
| | |
|--|---|
| Carburettor: Type M. J. J. N. | VM24SH #100 4D3-2 stages |
| Air cleaner: | Dry paper filter |
| Spark plug: | B-8E |
| Chassis: Frame Suspension Front Rear | Tubular-Double loop Telescopic (Coil spring, oil damper) Swinging arm (Coil spring, oil damper) |
| Transmission: Clutch Primary reduction system Primary reduction ratio Gear shifting type Gear ratio 1st 2nd 3rd 4th 5th Secondary reduction system Secondary reduction ratio | Wet, multiple-disk Gear 3.894 (74/19) Constant mesh, 5 speed 3.182 (Total r. ratio 37.177) 2.000 (Total r. ratio 23.368) 1.368 (Total r. ratio 15.989) 1.000 (Total r. ratio 11.685) 0.800 (Total r. ratio 9.347) Chain 3.000 (45/15) |
| Steering: Steering angle Caster Trail | 49° 60.5° 4.72 in. 120 mm |

| | |
|---|--|
| Tire size: Front Rear | 3.00-18-4PR (Trial universal) 3.25-18-4PR (Trial universal) |
| Lighting: Head light Tail light Stop light Meter light | 6V 25W /25W 6V 5W 6V 20W 6V 3W ×2 |
| Battery: Model No. Capacity | MV1-6D 6V 2AH |
| Magneto model: | F-130 |
| Tanks: Gosoline tank capacity Oil tank capacity | 1.9 us gal: 7.2ℓ 1.3 us qt. 1.2ℓ |

125 ATI ENGINE PERFORMANCE CURVES



125 ATI DRIVING PERFORMANCE CURVES



II. Yamaha Autolube

What is Yamaha Autolube?

Yamaha Autolube is an automatic engine lubrication system, which obsoletes the conventional 2-stroke pre-mixing system. Oil stored in the oil tank is metered automatically by an oil pump to the engine on demand, depending on speed and load.

Function of the Yamaha Autolube

The heart of the system is the compact precision oil pump developed by Yamaha engineering staff. It is driven by the engine through the reduction gear, functioning according to the carburetor throttle (accelerator grip). The flow of oil is varied depending on the engine RPM (speed) and load (throttle opening). The proper amount of oil is fed to the engine thus assuring optimum lubrication at all times.

Features of the Yamaha Autolube

The Yamaha Autolube eliminates lubrication problems peculiar to 2-stroke engines with the conventional “pre-mixing” system, and improves many inherent advantages of 2-stroke engines.

1. The Autolube system results in:

- Decreasing oil consumption by $\frac{1}{3}$ of the amount required by a conventional 2-stroke engine.
- Decreased carbon build-up
- Reduced exhaust smoke

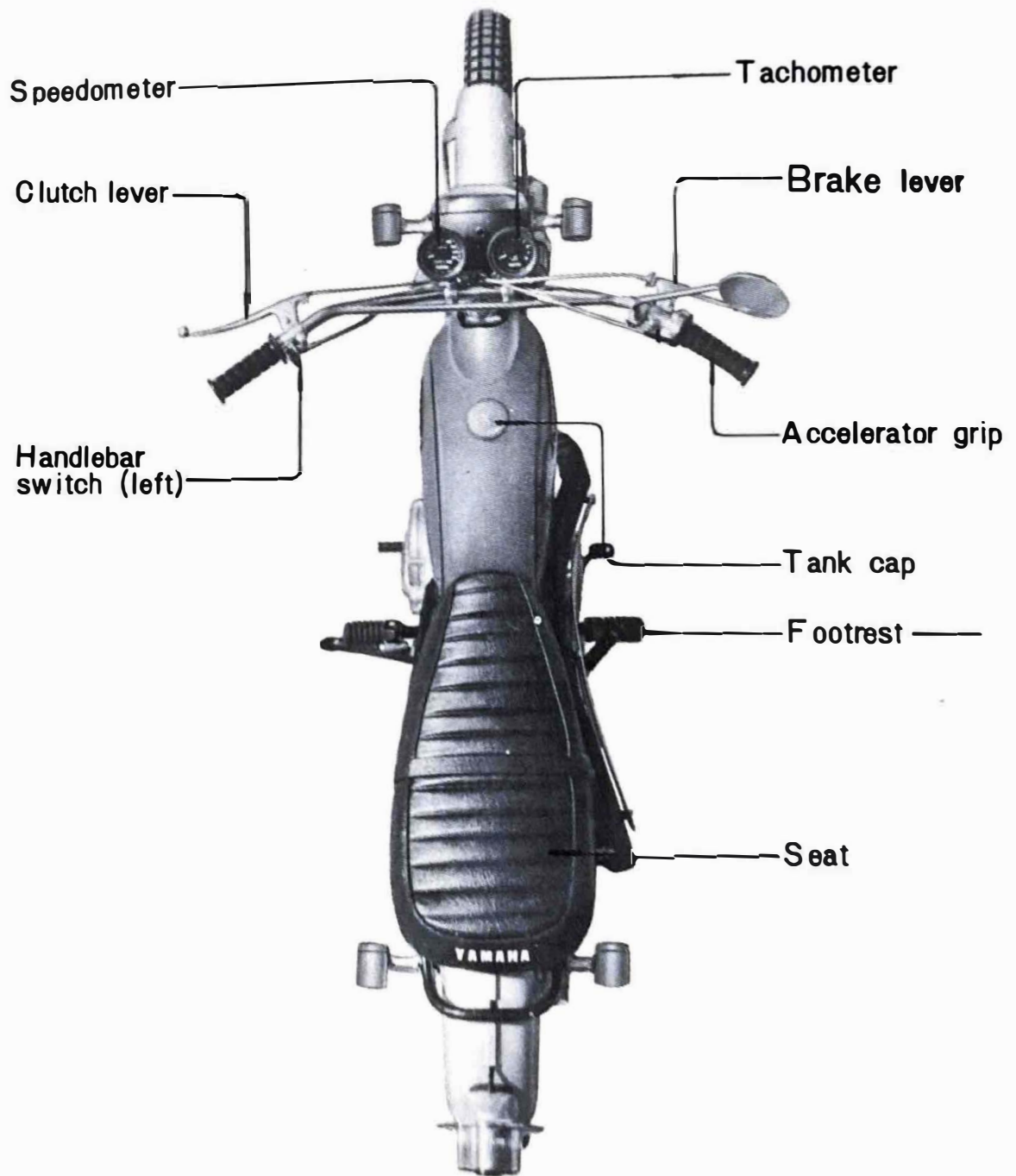
2. The Autolube system provides:

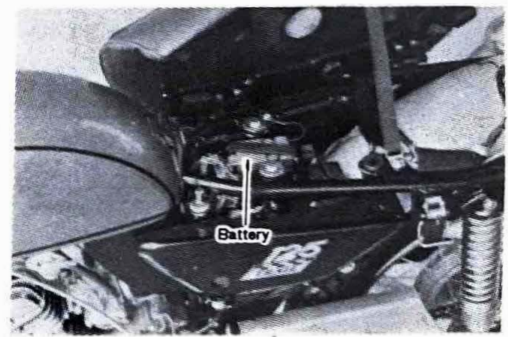
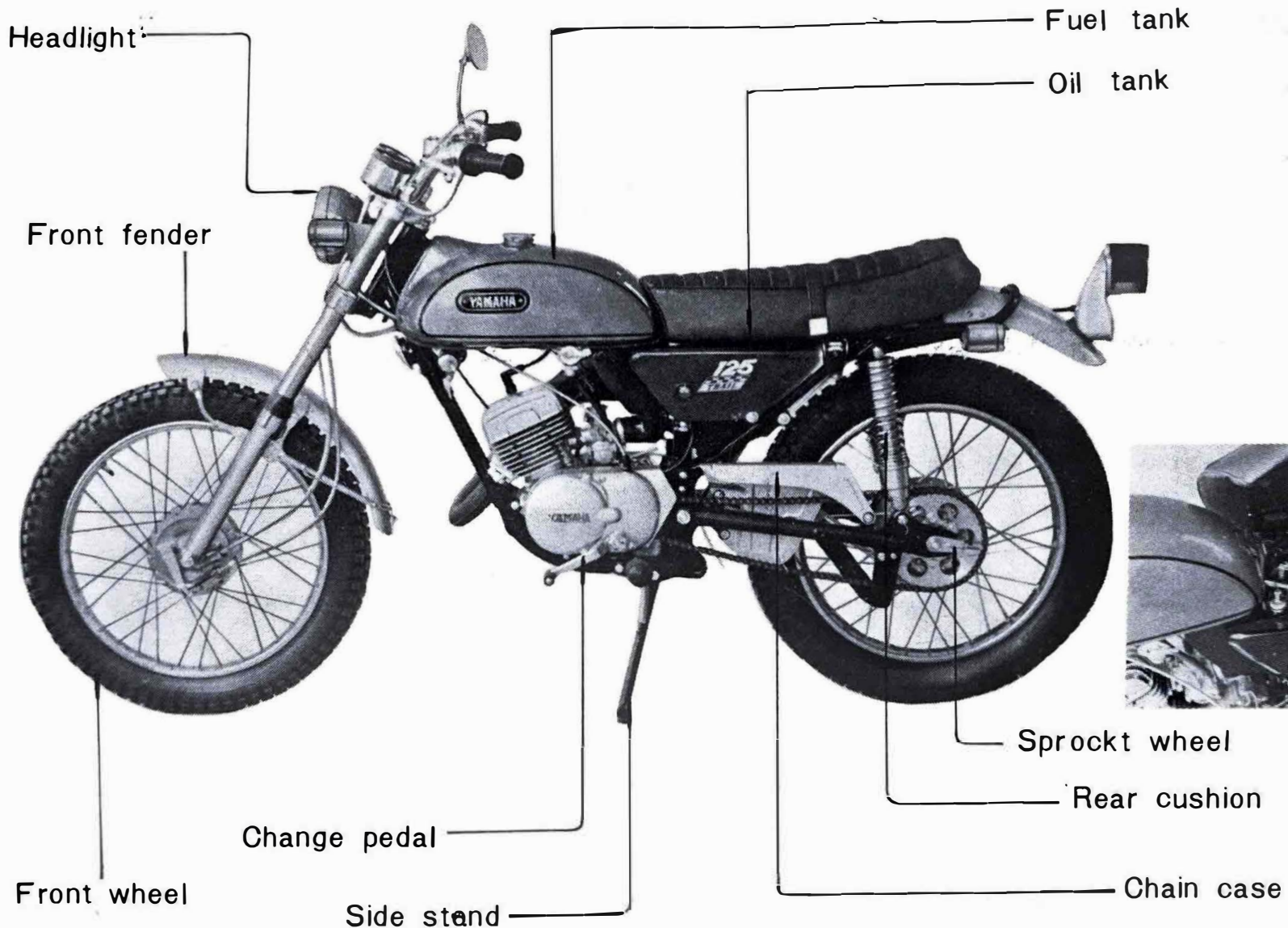
- Fresh oil supply
- Smooth lubrication due to large oil particles
- No worries about the quality of oil and oil-fuel mixing ratios

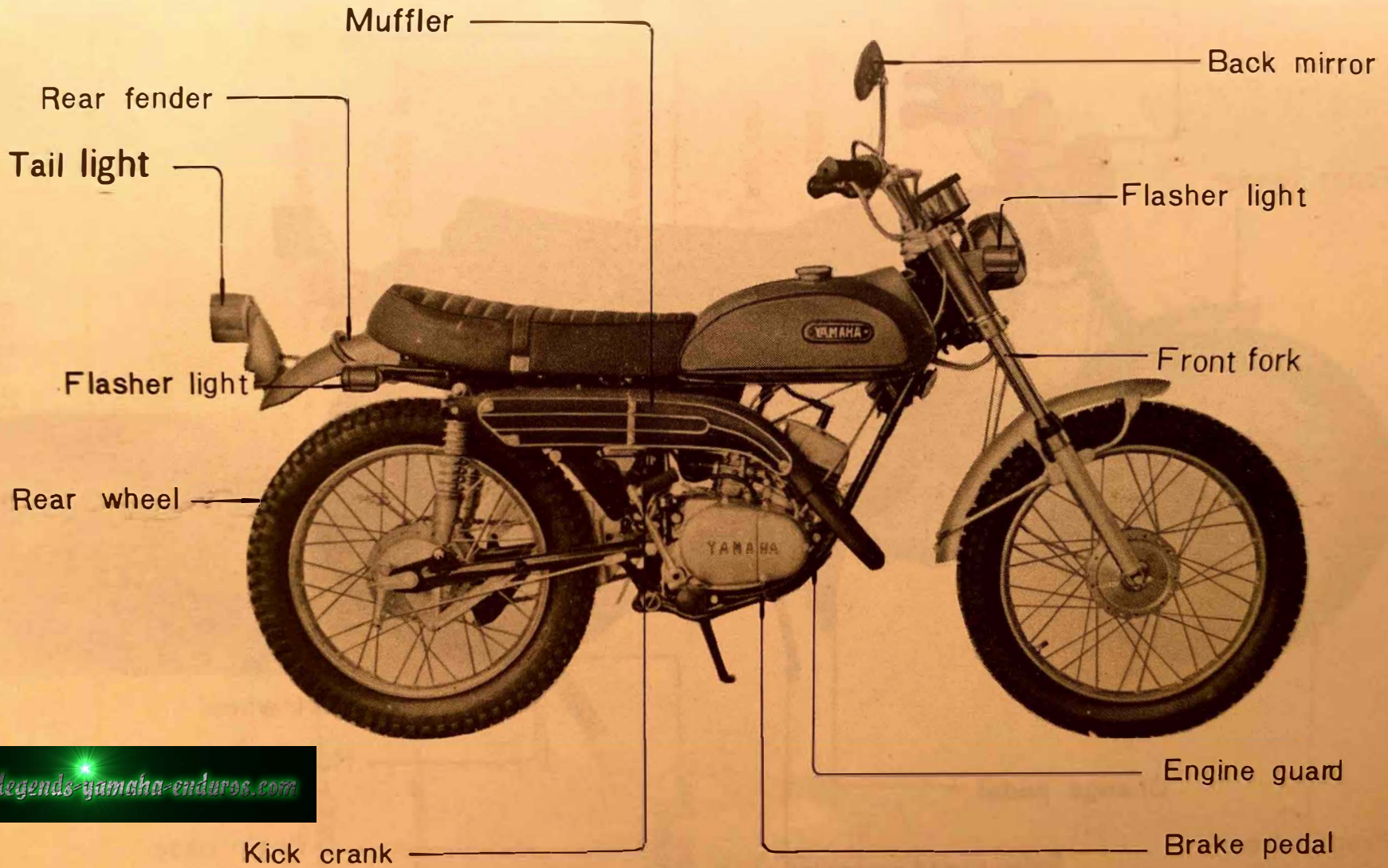
3. The Autolube system means:

- Fuel-“straight” gasoline only
- No pre-mixing of oil and gasoline
- * Yamaha Autolube oil guarantees improved engine performance and extended engine life.

III. Nomenclature







IV. Basic Instructions

1. Gasoline and Oil

The Yamaha Trail 125 AT1, equipped with the Yamaha Autolube system uses straight gasoline as fuel.

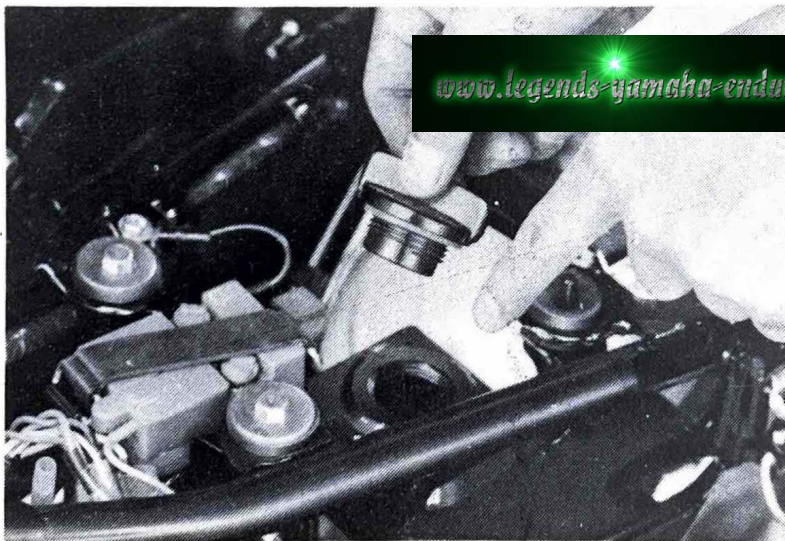
Gasoline: Use gasoline of 90 octane rating or more.

Oil: Use Oil for lubrication.

Store it in the separate oil tank located under the seat.

[Autolube Oil]

The Yamaha Autolube Oil, refined especially for this new lubricating device excels in lubrication, cleanliness and liquidity at low temperatures. The performance of the Autolube depends on the quality of oil. Yamaha Autolube Oil is recommended for higher performance and longer life of the engine.



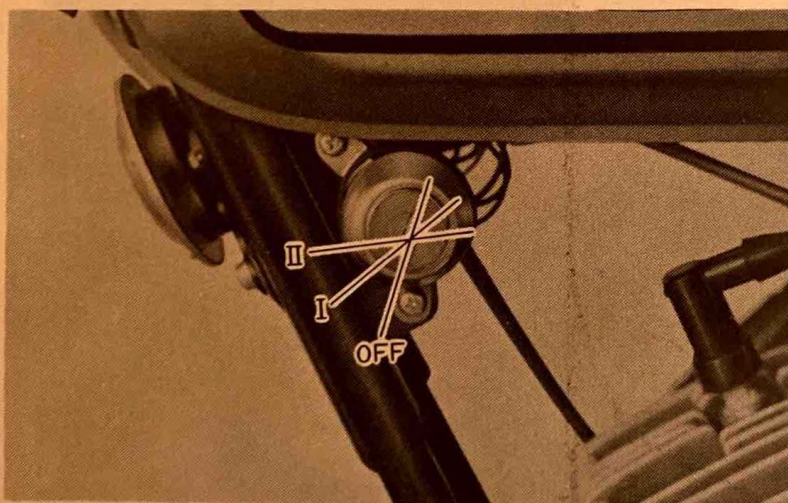
2. Familiarization with Equipments

(1) Main Switch

The main switch has three key positions, OFF, Ignition, and Ignition Lights.

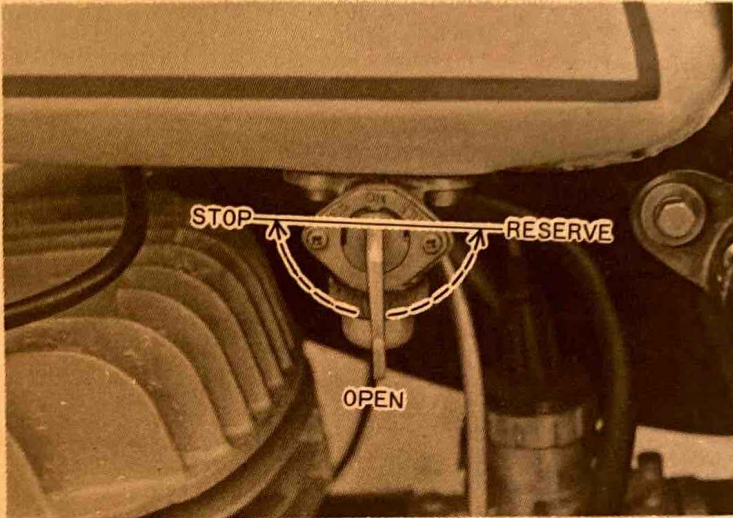
The following chart shows the key positions at which the various system are switched on or off. (The circle (o) denotes "Switch on".)

| | OFF | I | II | Instructions |
|---------------|-----|-----------------------|-----------------------|--|
| Engine | | <input type="radio"/> | <input type="radio"/> | To starting the engine, kick the kick pedal. |
| Neutral light | | <input type="radio"/> | <input type="radio"/> | The change pedal is in neutral. |
| Meter lamp | | | <input type="radio"/> | The engine is running. |
| Head light | | | <input type="radio"/> | The engine is running. |
| Tail light | | | <input type="radio"/> | |
| Stop light | | <input type="radio"/> | <input type="radio"/> | The brake is applied. |
| Horn | | <input type="radio"/> | <input type="radio"/> | The horn button is depressed. |



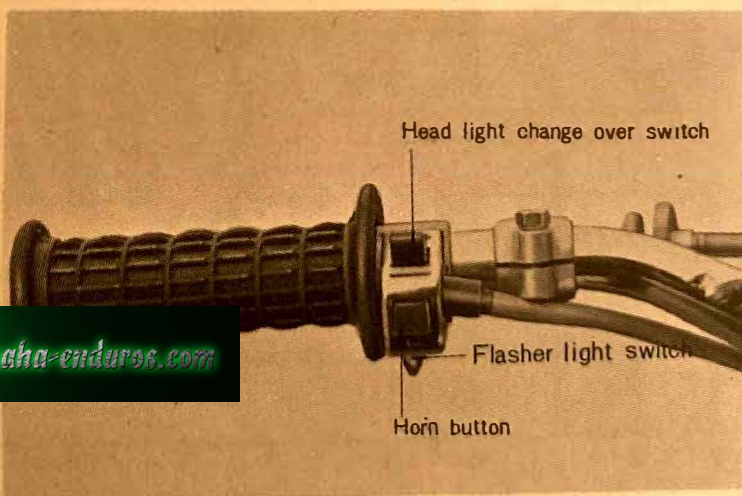
(2) Fuel Petcock

To allow the fuel to flow into the carburetor, set the fuel petcock lever to OPEN. Should you run low of fuel while driving, turn it to RESERVE. The reserve portion will enable you to drive approximately 50 miles (80 km). When parking, the lever should be turned to STOP.



(3) Handlebar Switches

- To sound the horn, depress the horn button.
- To lower the head light beam, push the switch toward you. To raise the beam, push the switch toward front.
- To light the left flasher light, push the switch to the left, and to light the right flasher light, push the switch to the right.



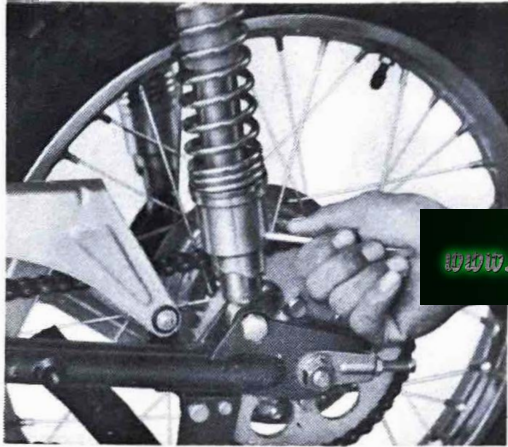
www.legends-yamaha-enduros.com

(4) Rear Cushions

The rear cushion can be adjusted according to load, road conditions, and rider preference.

○ How to adjust the rear cushion

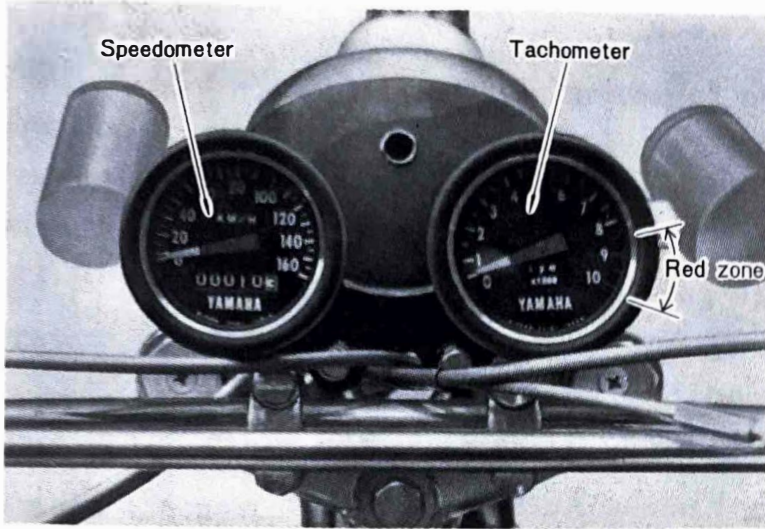
Insert the screw driver (service tool) into the adjusting hole and then turn it counterclockwise in order to change the position of the toothed notch.



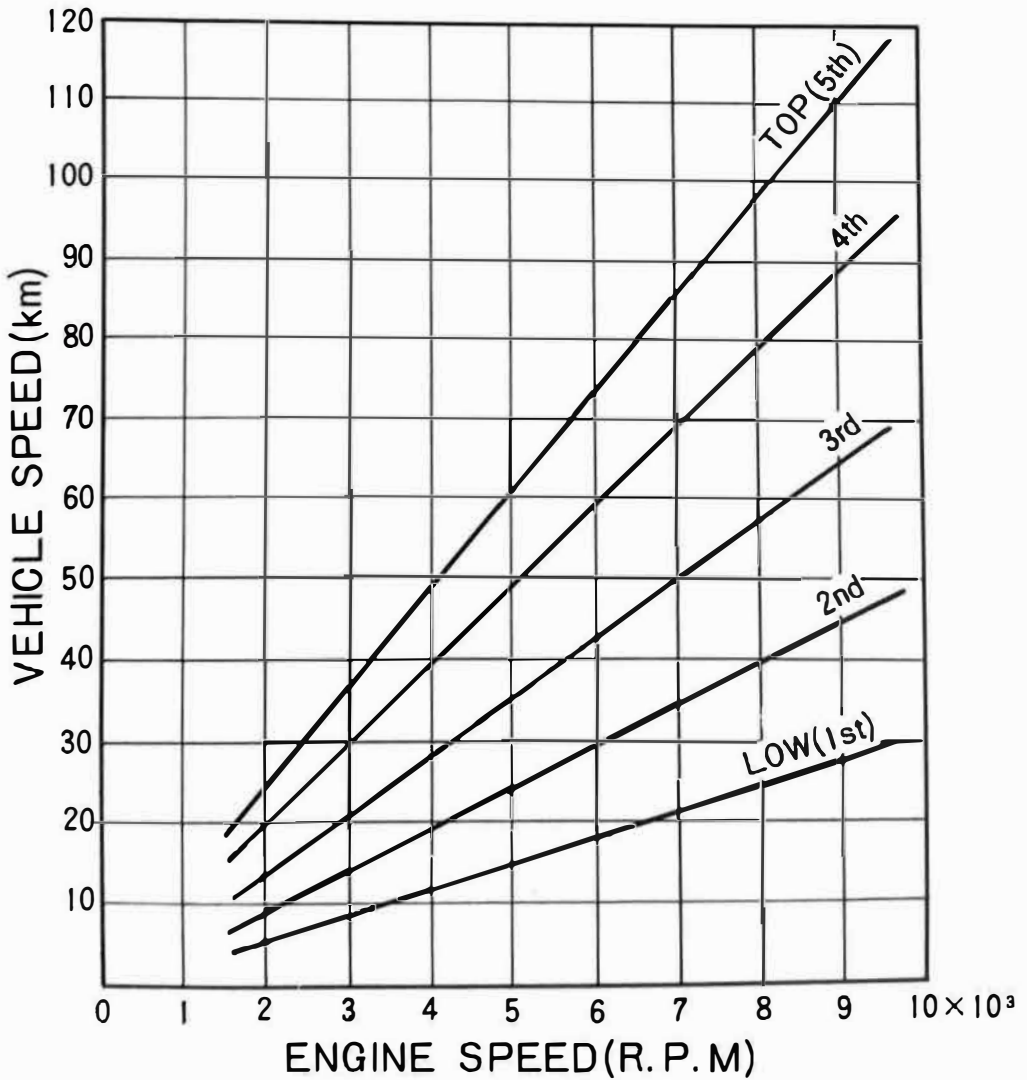
(5) How to Read the Tachometer

A tachometer is provided so that the rider can easily maintain engine RPM sufficient to keep the engine within the power curve. The standard Yamaha AT1 is designed to run best in the power range between 3,000 rpm and 7,000 rpm.

Never lug your engine! It is recommended not to use red-zone 8500 ~10,000 rpm.



The relation between the engine RPM and gears is shown in the diagram below.



3. Pre-operation Check

You should check the following points before each usage.

(1) Is the fuel sufficient?

Make sure that the fuel is sufficient for your driving plan. Fill the fuel tank with gasoline only.

(2) Is the oil sufficient?

If the oil is below the center hole on the glass view port, refill the oil tank with Yamaha Autolube Oil.



(3) Is the tire pressure correct?

The wrong tire pressure affects the riding comfort, steering, and life of tires.

Correct tire pressure:

Front - 14 lbs/in² (1.0 kg/cm²)
Rear - 17 lbs/in² (1.2 kg/cm²) } For on-the-road-riding

When the tire pressure is reduced below the specified value because of some reason, the tire may slip around the rim.

To prevent this slipping of the tire, bead stoppers should be used.

(4) Do the front and rear brakes work effectively?

Try the brake lever (right handlebar) and the foot brake (on the right side of the rear wheel). Check to see if the stop light is functioning.

(5) Do the lights and horn function well?

Check the horn, stop light, head light, meter lamp, etc.

4. Operation

(1) Starting the Engine

The Yamaha Trail 125 AT1 employs the kick starter system. The carburetor is provided with a starting system to produce the rich air-fuel mixture required for easy starting of the engine. It assures quick starting even in extremely cold weather.

Preparation for Starting

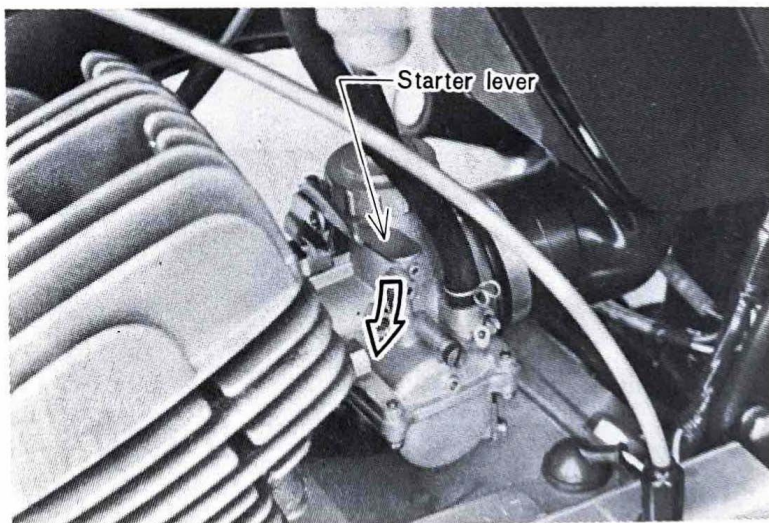
- Turn the fuel cock lever to the "OPEN" position.
- Insert the main switch key and turn it to the "Ignition" position. Make sure the neutral light is on.

The 125 AT1 is equipped with a primary kick starter. The engine can be started by kicking the kick pedal when in neutral or by disengaging the clutch if the transmission is in gear.

Starting When the Engine is Cold

Most engines are more difficult to start in cold weather. For easiest starting, a richer mixture of gas/air can be obtained by operating the starter lever.

- Depress the starter lever.
- Start the engine by kicking the kick pedal with the accelerator grip closed.



Starting When the Engine is Warm

When the engine is still warm from running or in warm weather:

- Don't use the starter lever.
- Slightly open the accelerator grip, and kick the kick pedal.

Warming Up

It is very important to allow a warming-up period of 2 minutes or so after starting the engine.

When the engine is started with the starter lever depressed, release it after starting, and keep the accelerator grip open until the engine begins to run smoothly.

Correct engine warm-up, along with periodic inspection will assure a longer service life for your engine.

(2) Operation Procedure

Shifting Gears

The Yamaha 125 AT1 is equipped with a foot-operated, 5-speed transmission. The purpose of the transmission is to change the ratio of engine RPM (driving power) and speed by means of the various gear combination available.

To shift into NEUTRAL, move the toe section of the change pedal downward and then raise it slightly to the neutral detent.

The neutral position is between the low and the second gear position.

FIFTH

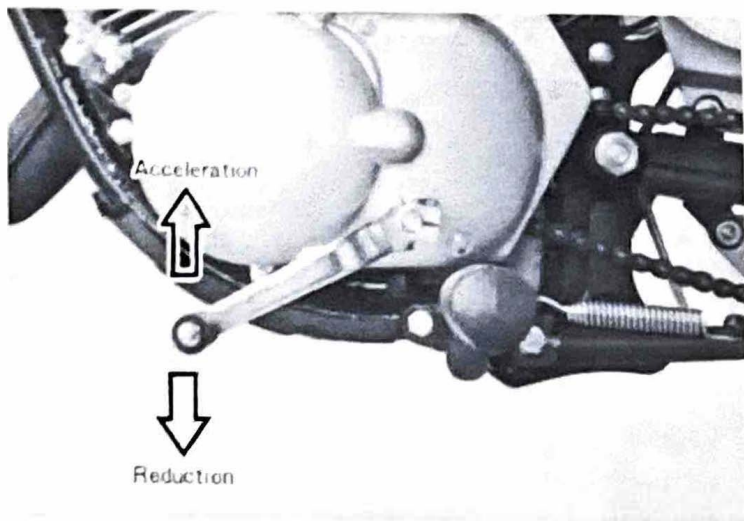
FOURTH

THIRD

SECOND

NEUTRAL

FIRST



Acceleration

- Grip the clutch lever to disengage the clutch.
- Depress the toe section of the change pedal to 1st.
- Slowly open the accelerator grip (the engine speed begins to increase), and release the clutch lever gently. Done properly, the machine will accelerate smoothly.

Riding on the Road

After starting off, accelerate to approximately 10 mph (15 km/h)

- Disengage the clutch while closing the accelerator grip.
 - To shift the gear into SECOND, raise the toe section of the change pedal one full position.
(In this case, the neutral position is bypassed)
 - Increase engine speed slowly and release the clutch lever. Accelerate to approximately 20~25 mph (30~40 km/h), and shift the gear into THIRD.
 - Decelerate by reversing the above procedure. Close the accelerator grip, disengage the clutch, and then depress the change pedal.
- * Do not run "lug" the engine unnecessarily as the engine may overheat or tend to foul spark plug.

Off-the-road Riding

When you ride your motorcycle over rough land, safety parts may fall off due to shocks from the ground or due to accidents such as turnover, and breakage or loss of parts may result. It is advisable to remove all safety parts before you start riding.

Parts to be removed: Head light, tail light, flasher light, speedometer, tachometer, battery and side stand.

Caution on Riding over General Paved Roads at High Speeds:

The AT1 is equipped with tires having a block pattern. As a result, the area where the tire contacts with the ground is smaller as compared with other types of tires. Therefore, take care not to slip your motorcycle when you are cornering at high speeds and at sharp angles.

(3) Stopping

To stop the machine, gradually reduce speed by closing the throttle and apply the front and rear brakes simultaneously.

Remember to apply the front and rear brakes together when running at high speeds. Applying only one brake may cause skidding or overturning.

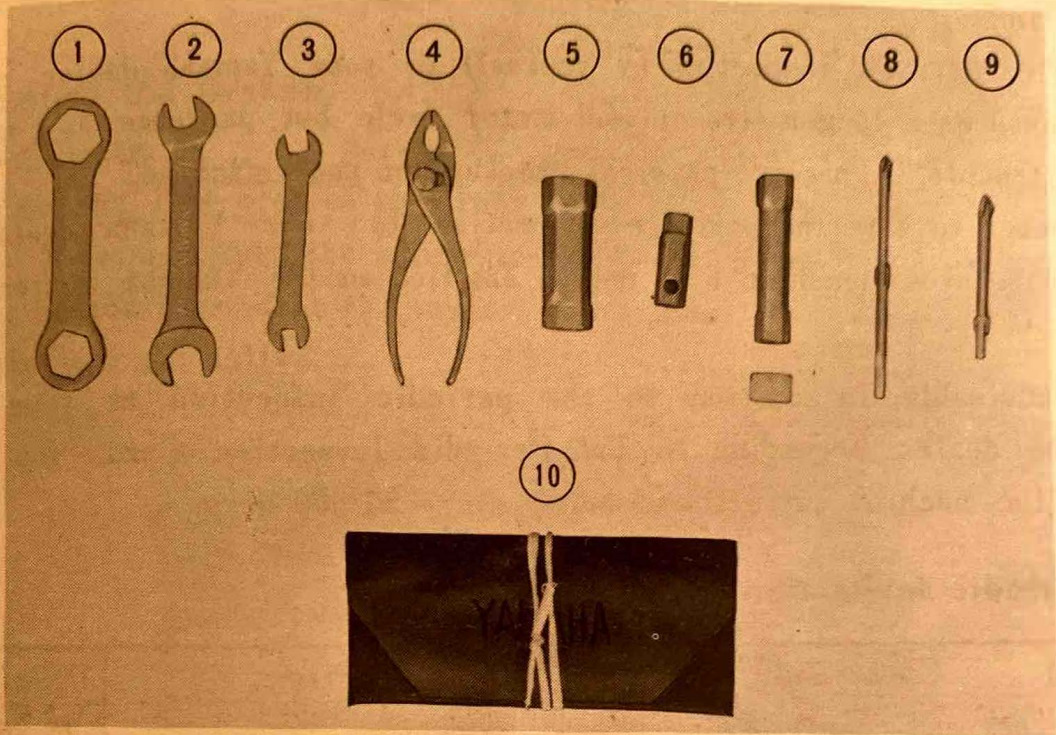
5. Break in Procedure

To secure a longer life of your Yamaha 125 AT1, a certain period of breaking-in operation is very important.

During the first 600 miles (1,000 km), the various parts of the engine wear and polish themselves to the optimum operating clearances. It is important to avoid prolonged full throttle operation on any condition which might result in excessive heating during this critical period.

Care taken at this time will result in longer life, better dependability and higher performance.

V. Service Tools



1. $22 \frac{m}{m} \times 26 \frac{m}{m}$ double-ended spanner
2. $13 \frac{m}{m} \times 17 \frac{m}{m}$ double-ended spanner
3. $8 \frac{m}{m} \times 10 \frac{m}{m}$ double-ended spanner
4. Pliers
5. $17 \frac{m}{m} \times 21 \frac{m}{m}$ socket wrench
6. $10 \frac{m}{m}$ socket wrench
7. Screwdriver handle and $13 \frac{m}{m}$ socket wrench
8. $\oplus \ominus$ screwdriver
9. \oplus screwdriver
10. Tool bag

VI. Inspection and Service

Regular inspection and maintenance will keep your motorcycle in top condition.

Daily or periodic inspection by yourself or your Yamaha dealer not only assures a longer life of your motor cycle but prevents any machine trouble. This is "physical checkup" of your machine.

Remember to have the periodic inspection by your Yamaha dealer; otherwise, your machine will not be entitled to the Yamaha warranty plan.

It is advisable, in addition to the periodic inspection at your Yamaha dealer according to the Periodic Inspection Card, you check the machine parts listed below every 30~60 days.

1. Periodic Inspection Guide

| | Check point | Instructions | P.Ref. |
|----|--------------------------|-----------------------|--------|
| 1 | Front and rear brake | Adjustment | 25,26 |
| 2 | Clutch | Adjustment | 27 |
| 3 | Gear oil | Level and replacement | 29 |
| 4 | Battery electrolyte | Refilling | 30 |
| 5 | Spark plug | Cleaning | 31 |
| 6 | Air cleaner | Checking and cleaning | 32 |
| 7 | Carburetor | Cleaning | 33 |
| 8 | Drive chain. | Adjustment and oiling | 34 |
| 9 | Muffler | Cleaning | 36 |
| 10 | Cylinder head and piston | Cleaning | 36 |
| 11 | Screws, bolts and nuts | Retightening | 37 |

Be sure to check the above points before long-distance touring.

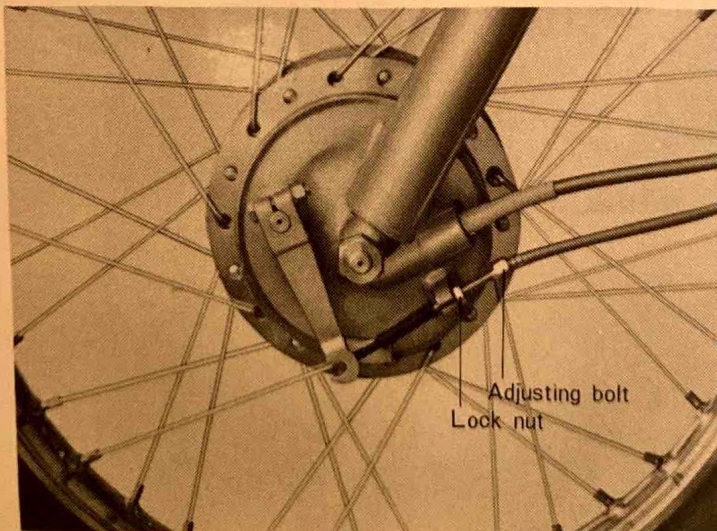
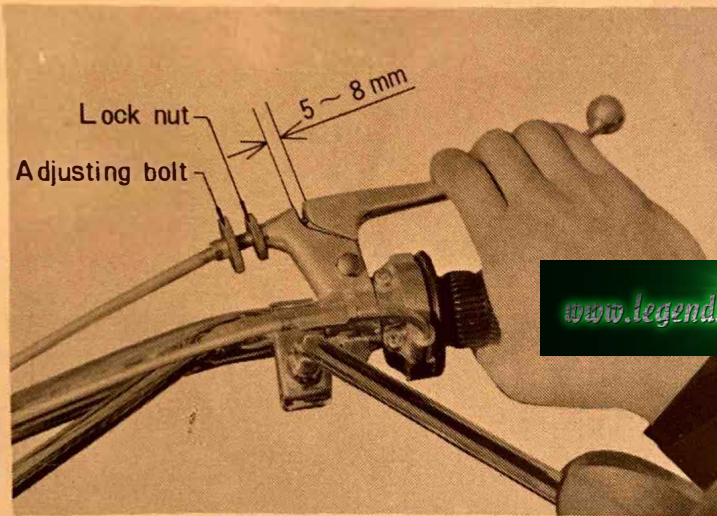
2. Inspection and Adjustments

The methods of inspection and adjustments are discussed below. This information will be of value in your daily inspections.

Adjusting the Brakes

Front Brake:

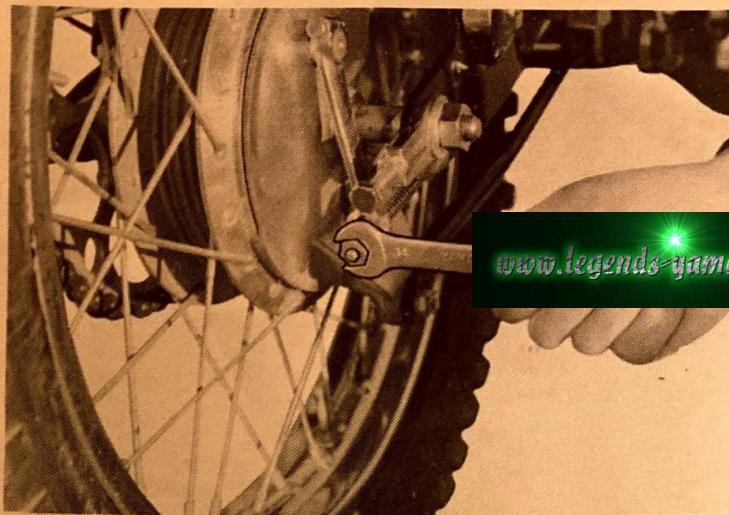
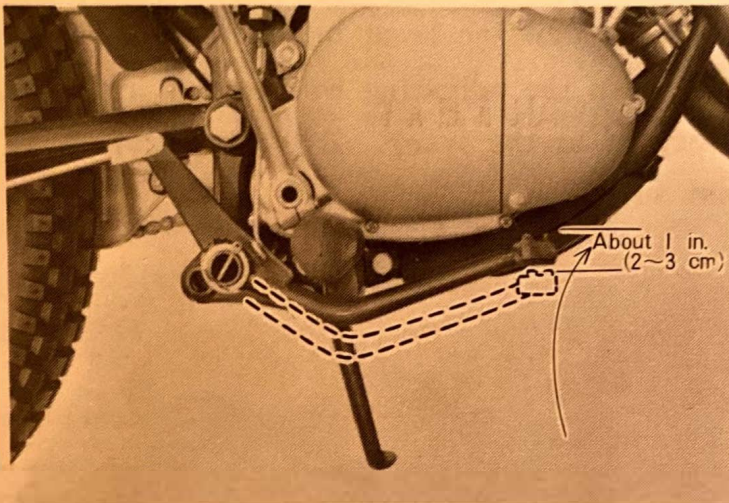
The correct free play of the front brake lever is 0.2 to 0.3 in. (5 to 8 mm). To adjust, turn the adjusting bolt to the front brake cable end/or the adjuster located at the lever. After adjustment, be sure to tighten the lock nut fully.



Rear Brake:

The correct free play of the rear brake pedal is approximately 1 in. (25 mm). To adjust the play, turn the adjusting nut attached to the rear brake cable end half turn at a time.

After the adjustment, check the stop light to see if it functions properly.



Checking the Brake Lining:

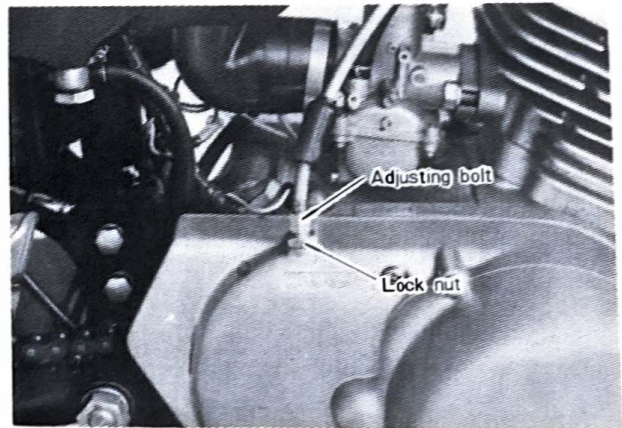
Disassemble the wheel assembly every 3,000 miles (5,000 km), and check it for wear and clean the brake shoe and brake drum. Take care not to get any oil on the lining friction surface.

Adjusting the Clutch

The clutch lever should have free play of 0.08 to 0.12 in. (2 to 3 mm) to maintain full pressure against the clutch facing. If the play is excessive, clutch actions will be impaired. If the play is insufficient, the clutch will slip.

How to Adjust the Clutch:

To adjust the clutch, turn the adjusting bolt attached to the clutch lever holder or adjuster located at the clutch cable end. After the adjustment, fully tighten the lock nut.



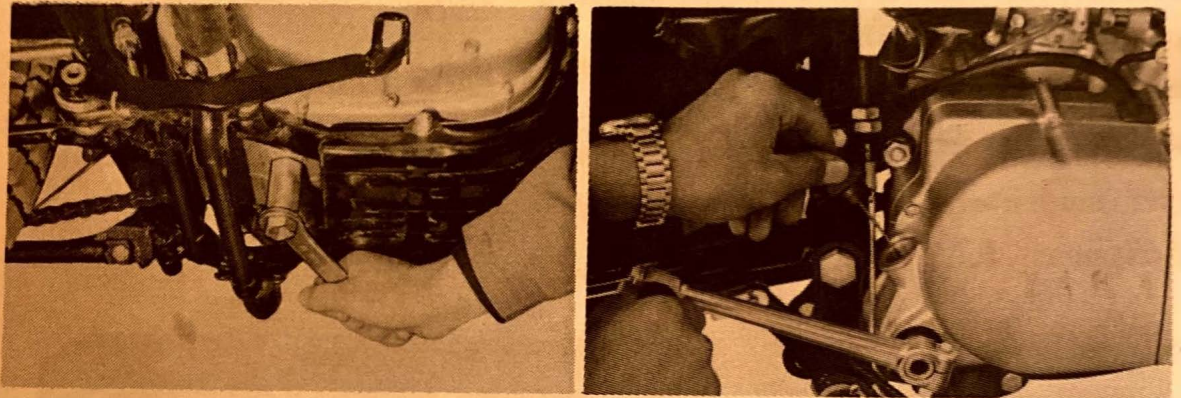
www.legends-yamaha-enduros.com

Replacing the Gear Oil

During the breaking-in period, replace the gear oil after 30 days from the purchase or after 300 miles (500 km) running.

After the first replacement, replacement should be made at least every three months or every 1,200 miles (2,000 km).

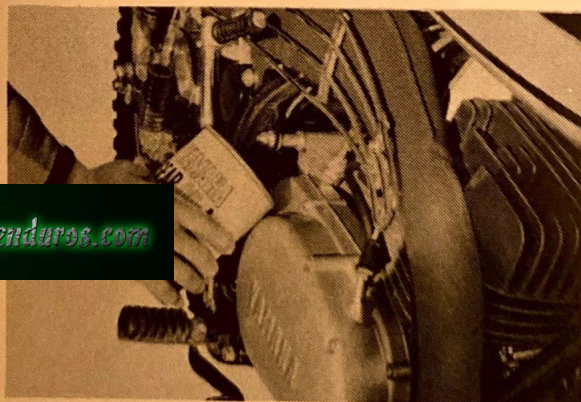
To drain the oil from the bottom of the crankcase, remove the oil drain plug.



After draining the oil, fully tighten the oil drain bolt, and fill with new oil up to the specified level.

OilSAE 30 MOTOR OIL.

Oil Amount0.7~0.8 us quarts (0.7~0.8 litres)



www.legends-yamaha-enduros.com

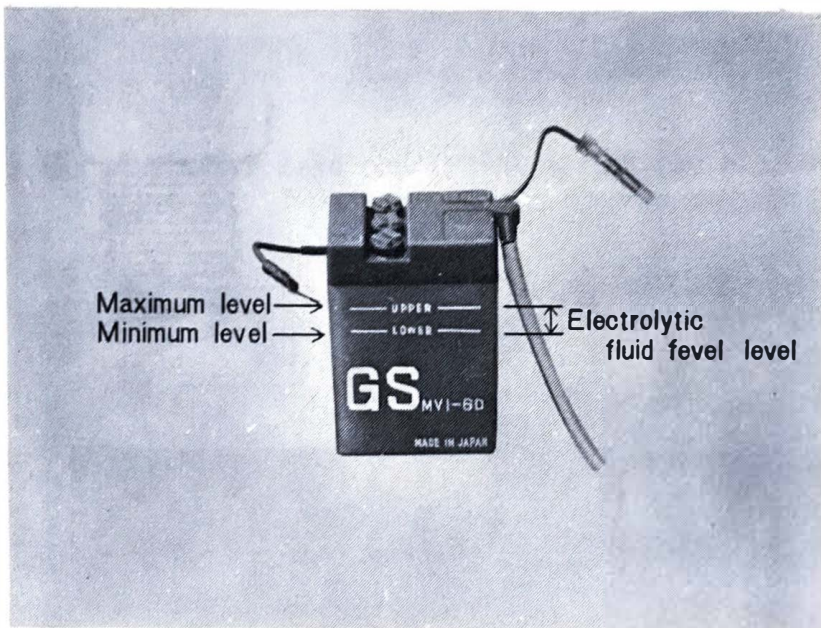
Checking the Battery electrolyte

If the battery electrolyte is below the minimum level, remove the battery and add distilled water.

Check the overflow pipe for clogging or deformation.

If your motorcycle will not be used for several months, remove the battery and keep it in dry, cool place or have it keep in a service shop.

If stored for more than 60 days, it should receive an occasional recharge. Before reinstallation, it should be fully charged.



Checking the Spark Plug

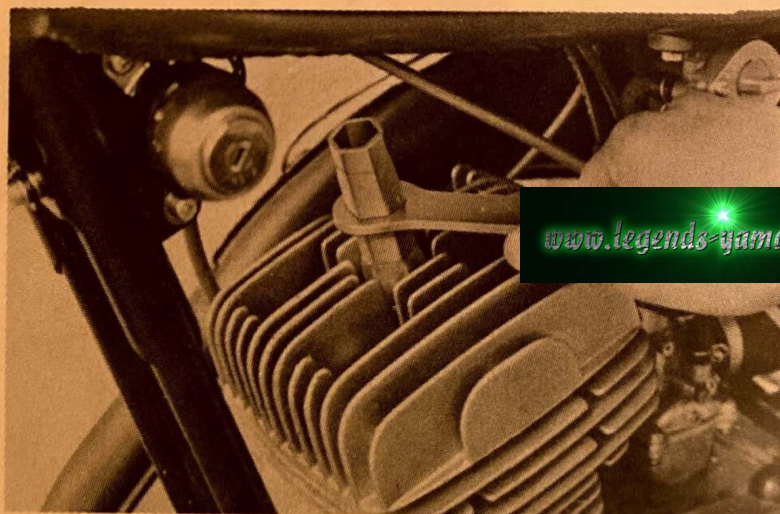
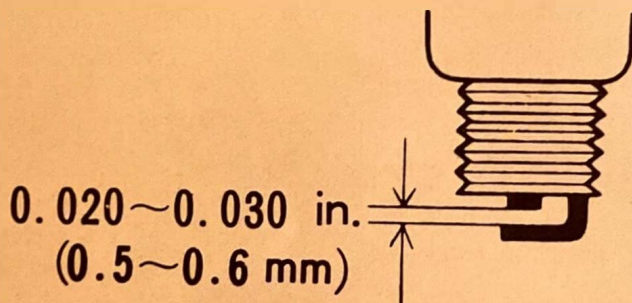
A spark plug ignites the air-fuel mixture in the cylinder. A dirty plug causes hard starting, engine misfiring and other problems.

Clean carbon from the electrodes and adjust the point gap.

- Remove carbon build-up, with a wire brush or a wire.
- Adjust the spark plug point gap to 0.020~0.030 in. (0.5~0.6 mm).

Standard Spark Plug : B-8E

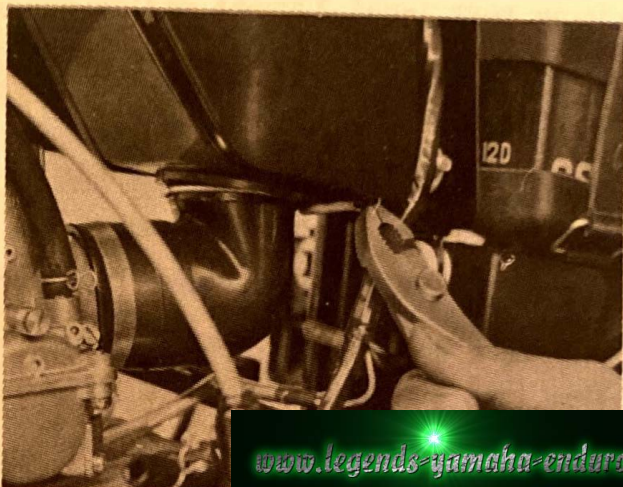
- Porcelain around the center electrode should be a light tan color.
- Replace the spark plug if the electrodes and porcelain are eroded or cracked. If your machine is frequently ridden at low speeds, the spark plug will become somewhat oily and sooty. Replace it with a hotter type.



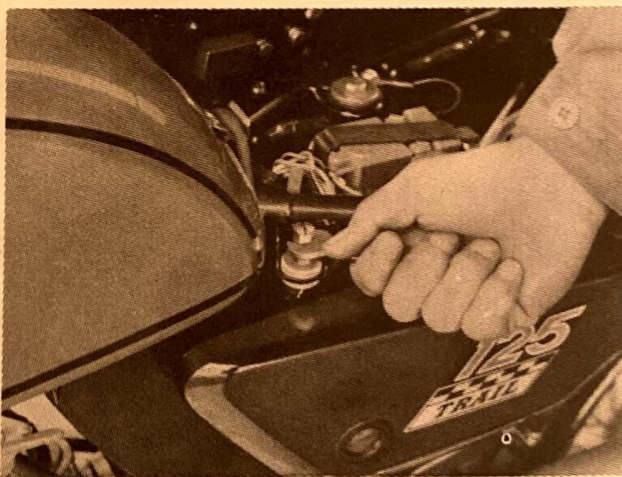
Cleaning the Air cleaner

An air cleaner filters grit and other impurities from the air. If you drive often on dusty roads, be sure to clean it at least once a month.

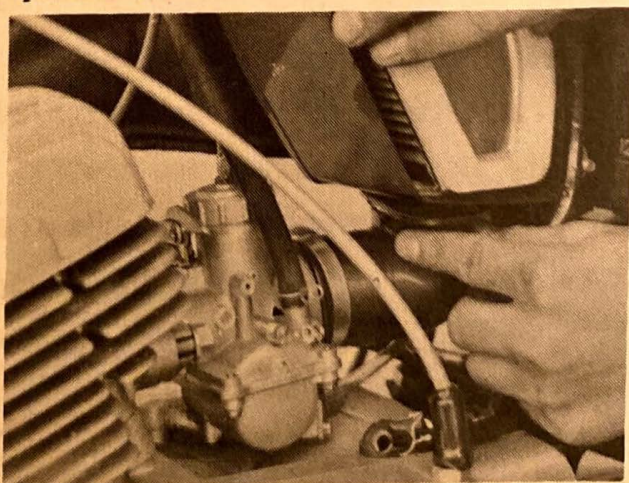
a) Remove the oil tank.



b) Remove the air cleaner case cap fitting spring and cleaner case cap.



c) The cleaner element can be pulled out.



Checking the Carburetor

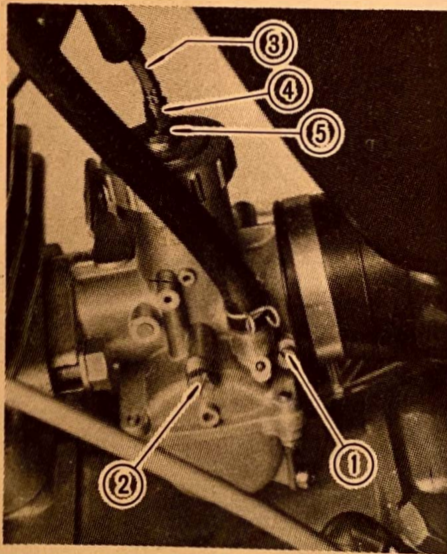
Each carburetor is set by the factory after careful tests.

Except for the following, do not change the carburetor setting without consulting your local Yamaha dealer.

a. Idling Speed Adjustments

- Fully tighten the pilot air screw ①, and back off it $1\frac{1}{2}$ turns.
- Slightly loosen the adjusting screw of the throttle cable ③ connected to the accelerator grip, and start the engine.
- After warming up the engine, turn the throttle stop screw ② so that the engine increases to 1,200~1,300 rpm.

After this adjustment, loosen the lock nut ⑤ to adjust the play of the throttle cable ③ to 0.02~0.04 in. (0.5~1.0 mm); and turn the throttle cable adjuster ④ while pulling the throttle cable for the adjustment. Then lock the throttle cable with the lock nut.

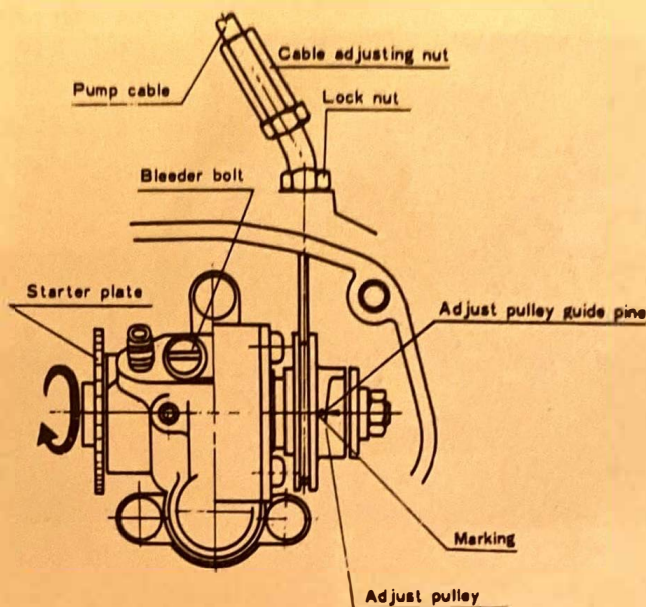


b. Adjusting the Pump Cable

After adjustment of the carburetor, adjust the pump cable coupled with the throttle valve.

- Slightly turn the accelerator grip from the closed position so that free play of the accelerator grip is nil. (In other words, the throttle valve is ready to open only another slight turning of the throttle.)

- Turn the pump cable adjusting nut so that the marking on the adjusting pulley is aligned with the guide pin.

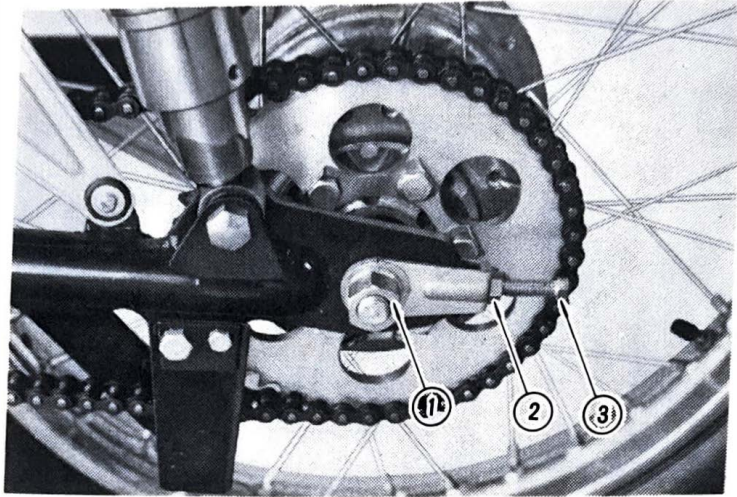


Adjusting the Drive Chain

The drive chain should have a play of approximately $1\frac{1}{4}$ in. (30 mm) up and down at the center of the lower section with the rear wheel on the ground. Since a dirty chain causes gauling and eventual seizing, apply oil at regular intervals. In addition, wash it in gasoline before oiling at every periodic inspection.

Adjusting Chain Tension:

- Loosen the rear brake adjusting screw.
 - Loosen the tension bar nuts.
 - Loosen the rear wheel nuts ①.
 - Loosen the chain adjusting bolt lock nuts, ② and shift the wheel shaft so that both ends of the wheel shaft are positioned evenly by utilizing the marks on the swing arms.
 - After adjusting, tighten the tension bar nuts.
 - Adjust the play of the brake pedal.
- * After these adjustments, check the play of the brake pedal and function of the stop light.

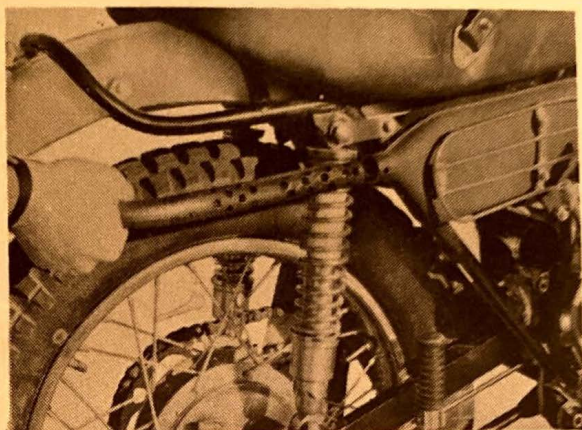


Cleaning the Muffler

To remove the inner cylinder from the muffler, remove the set screw and pull out the tail pipe.

Remove carbon with a wire brush.

Check the inner cylinder bore for clogging. If clogged, clean it with a wire.

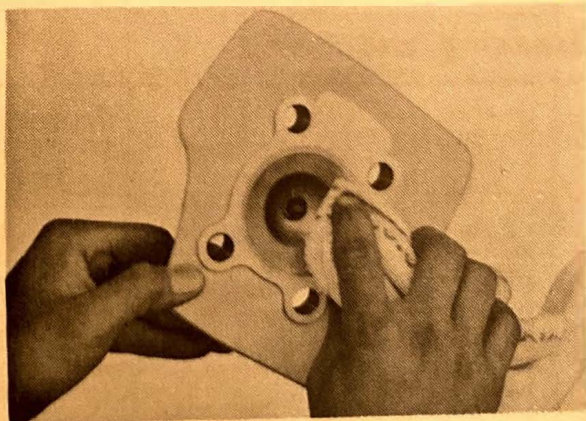
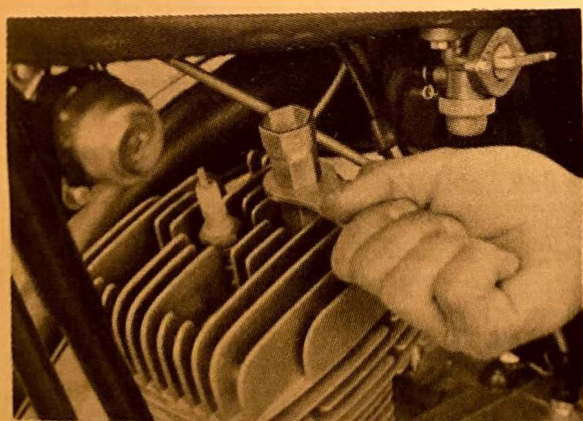


Cleaning the Cylinder Head and Piston

Carbon accumulations around the cylinder head and piston will result in loss of power, engine knock, overheating, and other problems.

- a. Remove the cylinder head and remove carbon from the combustion chamber.
- b. Remove carbon from the piston head.

To clean them, use a wire brush or scraper and rags dampened with solvent.



Cleaning the Fuel Cock Filter

The fuel cock filter removes impurities from gasoline before they flow into the carburetor. A dirty filter clogs the system and as a result, the engine will not work properly. Clean it from time to time. Remove the cup from the fuel cock and remove the filter. Wash it carefully in gasoline and reinstall.



Retightening Screws, Bolts and Nuts

Check the screws, bolts and nuts in the parts listed below and retighten them if necessary.

| | |
|-----------------------|-------------------|
| Front and rear wheels | Engine mountings |
| Foot rests | Carburetor |
| Swing arm shaft | Air cleaner cover |
| Muffler | Exhaust nuts |
| Side stand | Rear cushion |
| | Handlebars |

Greasing and Oiling

| | Parts to be lubricated | Distance of driving at 1st lubr., miles | Lubrication interval, miles | Type of Lubricant |
|---|------------------------|---|-----------------------------|-------------------|
| 1 | Front brake cam shaft | 600 | 2,000 | cup grease |
| 2 | Rear brake cam shaft | 600 | 2,000 | " |
| 3 | Front brake cable | 600 | 2,000 | " |
| 4 | Rear brake cable | 600 | 2,000 | " |
| 5 | Accelerator grip | 600 | 2,000 | " |

| | | | | |
|----|--------------------|-----|-------|------------|
| 6 | Stand shaft | 600 | 2,000 | cup grease |
| 7 | Brake linkage | 600 | 2,000 | ☞ |
| 8 | Drive chain | 300 | 600 | motor oil |
| 9 | Gear oil | 300 | 1,200 | |
| 10 | Swinging arm shaft | 600 | 2,000 | cup grease |

VII. Racing

Conversion of the Yamaha AT1 for racing

The Yamaha Trail 125 AT1 is easily converted into a high-performance motocrosser using alternate Yamaha parts.

* It is suggested that when you desire to make this conversion you enlist the services of your local Yamaha dealer.

1. Engine Tune up

The engine can be tuned up by simply standard parts with tuning parts.

○List of motocrosser tuning parts.

| No. | Part No. | Part Name | Q'ty | Remarks |
|-----|--------------|------------------|------|---|
| 1 | 248-11111-70 | Head, Cylinder | 1 | |
| 2 | 248-11311-70 | Body, Cylinder | 1 | |
| 3 | 248-11631-70 | Piston | 1 | 1 ring |
| 4 | 94700-00035 | Plug, Spark | 1 | NGK B-9E |
| 5 | 248-11611-70 | Ring, piston-top | 1 | |
| 6 | 248-14101-70 | Carburetor ass'y | 1 | VM26SH |
| 7 | 97201-08040 | Bolt | 1 | |
| 8 | 248-13511-70 | Joint | 1 | |
| 9 | 248-13556-70 | Gasket | 1 | |
| 10 | 161-15426-00 | Cover, oil pump | 1 | Required only when traveling with oil pump removed. |

| | | | | |
|----|--------------|--------------------|---|---|
| 11 | 248-14610-70 | Exhaust pipe ass'y | 1 | |
| 12 | 174-17461-30 | Sprocket, drive | 1 | 13T |
| 13 | 174-17461-40 | Sprocket, drive | 1 | 14T |
| 14 | 174-17461-50 | Sprocket, drive | 1 | 15T (15T is standard tuning parts.) |
| 15 | 174-17461-60 | Sprocket, drive | 1 | 16T |
| 16 | 214-17819-10 | Cap, housing | 1 | Remove tachometer, and install cap instead. |

2. Modification of the Chassis

Modification of the chassis just requires the removal of the chassis components unnecessary for motocross.

- Replace both front and rear tires with those of the motocross specification.
- Choose the best suitable sprocket wheel for motocross. Several types of sprocket wheels varying in the number of teeth are available at your Yamaha dealer's shop.
- Remove all electrical components together with the wire harness, except for the magneto and ignition coil.
- Connect the black lead of the magneto to the same color lead of the ignition coil.

It is advisable to use the following optional parts to make the AT1 the full-equipped motocrosser.

| No. | Part No. | Part Name | Q'ty | Remarks |
|-----|--------------|----------------------|------|--|
| 1 | 248-25443-10 | Gear, sprocket wheel | 1 | 43T |
| 2 | 248-25445-10 | Gear, sprocket wheel | 1 | 45T |
| 3 | 248-25447-10 | Gear, sprocket wheel | 1 | 47T (47T is standard.) |
| 4 | 248-25449-10 | Gear, sprocket wheel | 1 | 49T |
| 5 | 94418-18045 | Rim | 1 | 1.85B×18 |
| 6 | 214-25394-00 | Spacer, bead | 1 | For 1.85B |
| 7 | 94135-18000 | Tire | 1 | For rear-3.50-18 |
| 8 | 94235-18022 | Tube | 1 | For rear-3.50-18 |
| 9 | 94335-18018 | Band, rim | 1 | For 3.50-18 |
| 10 | 94127-21071 | Tire | 1 | For front-2.75-21 |
| 11 | 94227-21031 | Tube | 1 | For front-2.75-21 |
| 12 | 94327-21024 | Band, rim | 1 | For front-2.75-21 |
| 13 | 94416-21044 | Rim | 1 | 1.60A×21 |
| 14 | 248-25196-10 | Spoke, inner | 18 | For 1.60A×21 |
| 15 | 248-25197-10 | Spoke, outer | 18 | For 1.60A×21 |
| 16 | 214-25194-00 | Spacer, bead | 1 | For 1.60A |
| 17 | 152-25139-00 | Blind plug | 1 | Remove speedometer and install blind plug. |

3. Service Data (Tuning parts specifications)

- Piston clearance0.040—0.050 mm
- Piston ring end gap0.5 mm or less
(when piston is fitted in cylinder)
- Spark plugStandard B-9E
- Ignition timing2.0 mm B.T.D.C.
- Carburetor setting.....M. J. (Main jet) #150
J. N. (Jet needle) 4F6-1 step
N. J. (Needle jet) 0-2
C. A. (Throttle valve 2.5 cut-away)
P. J. (Pilot jet) #35
A. S. (Air screw back off) 2³/₄ turns
- Fuel mixing ratioAutolube in use: 30 : 1

Autolube removed: 15 : 1

* These tuning parts, optional parts and service data may be subject to change without advance notice.

When any of these is necessary, consult your Yamaha dealer.

4. Change in Specifications

Participants in racing must change specifications of the machine depending on conditions of the racing course, road surface, soil, length of straight ways, angles of curves, number of curves, slopes, weather, temperatures, and skill of the rider.

These factors and conditions must be determined by the rider himself after trial running over the whole course of racing.

Main Points to be Modified

○ Carburetor Setting

In addition to the specified M.J., the rider should carry with him spare M.J.s whose gauge numbers are larger and smaller than the specified by 10, respectively.

○ Secondary Reduction Ratio

Consideration should be given to a combination of the drive sprocket and sprocket wheel so that gear shifting to 3rd and 4th is easy.

○ Plug

Change the plug by judging discoloring of the plug. Choose the best suitable one from B-8EN, B-9EN and B-10EN.

○ Tire Pressure

Adjust the tire pressure depending on road conditions and the rider's choice.

○ Front Fork

Adjust the front fork by adjusting the quantity of oil. (The oil amount is in the range of 145 to 160 cc.)

Note: The 250 DT1 front fork can be used for the AT1 without giving modification to it.

○ Rear Cushions

Adjust the spring properly depending on the rider's choice. It is possible to use the DT1 rear cushions for the AT1 without giving modification to them.

○ Handlebar

Loosen the handle lever holder before racing. It will protect the rider's hands or fingers from getting injured, in case of accidental turnover during the racing. (The lever can easily turn when the machine turns over.)

5. Miscellaneous Notes

Racing requires the severest operation of the machine as well as high performance and extra durability.

Accordingly, thorough inspection and service of the machine before the racing are the most important. In particular, the engine will be operated at high speeds for many consecutive hours. Hence, even a minor defect may result in engine troubles. Be sure to check and service the machine with special care prior to the racing.

The engine newly tuned up must be handled in the same manner as a brand new machine, so it requires a certain period of run-in test.

- The racer should devote the maximum possible time to the inspection and service of the machine prior to racing. "Thorough inspection and service are the first step to victory."

Note;

- 1) Tuning parts will be put on sale from March 1969.
- 2) These parts may be subject to change in specifications (part numbers, setting values, etc.). When using them, consult your Yamaha dealer.

MEMO

A series of horizontal dotted lines for writing.

MEMO

A series of horizontal dashed lines for writing.

WIRING DIAGRAM

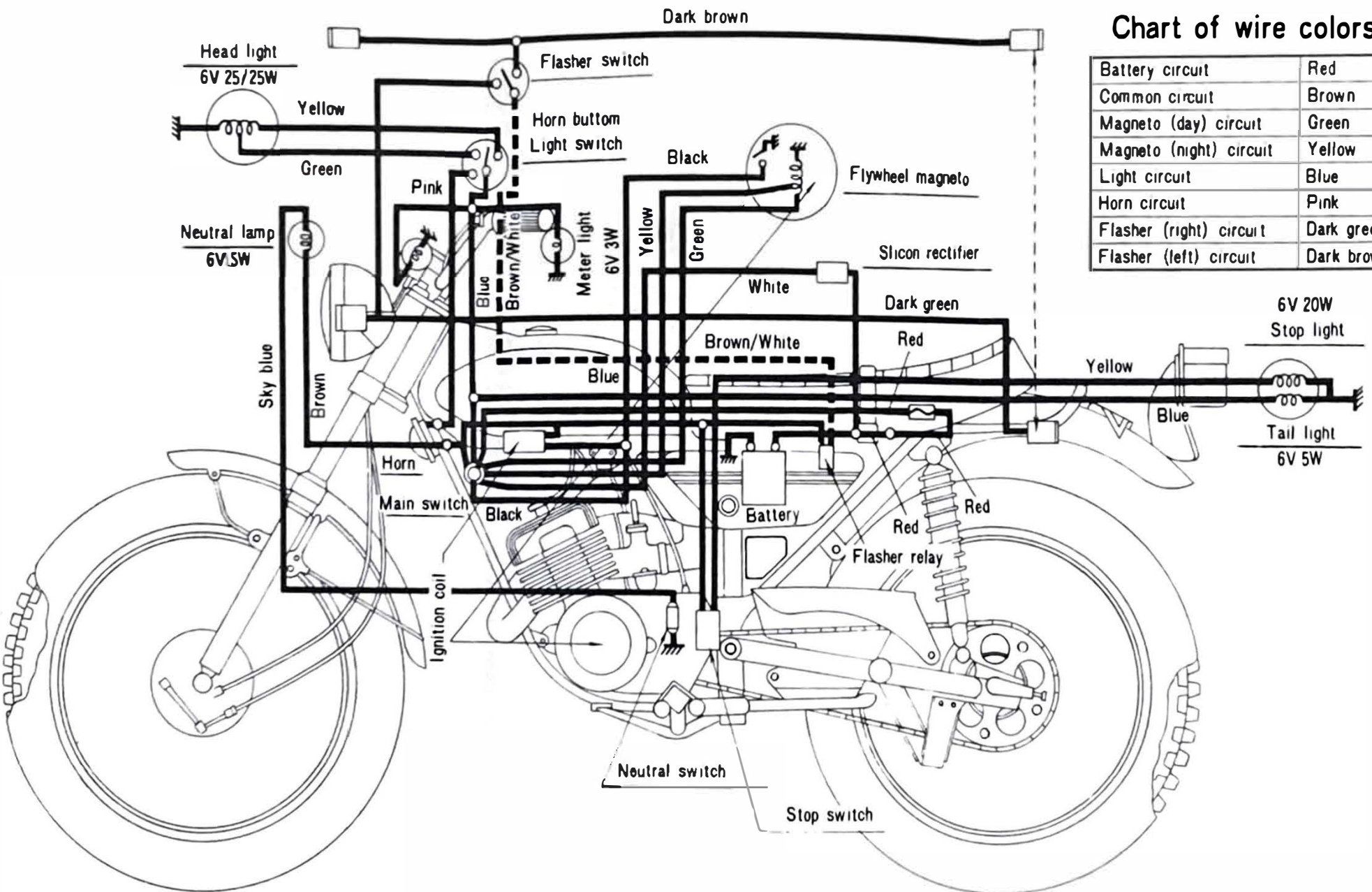


Chart of wire colors

| | |
|-------------------------|------------|
| Battery circuit | Red |
| Common circuit | Brown |
| Magneto (day) circuit | Green |
| Magneto (night) circuit | Yellow |
| Light circuit | Blue |
| Horn circuit | Pink |
| Flasher (right) circuit | Dark green |
| Flasher (left) circuit | Dark brown |

6V 20W
Stop light

6V 5W
Tail light

www.legends-yamaha-enduros.com



YAMAHA MOTOR CO., LTD.

PRINTED IN JAPAN