

# YAMAHA

## 250 SINGLE ENDURO

RIDER'S MANUAL  
**DT1C**

[www.legends-yamaha-enduros.com](http://www.legends-yamaha-enduros.com)



**YAMAHA MOTOR CO., LTD.**

(アメリカ・カナダ向け)

The new Yamaha Enduro 250 DT1C 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 GYT kit 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 DT1C.

The power, high performance, and styling of the DT1C 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	19
4. Operation	20
5. Break-in Procedure	23
V. Inspection and Service	24
1. Periodic Inspection Guide	24
2. Inspection and Adjustment	25
VI. Racing	38
1. Conversion of the Yamaha DTIC for racing	38
(1) Engine Modifications	38
(2) Chassis Modifications	38
(3) Service Standards	39
2. Miscellaneous (Racing)	39
(1) Technical Information on Engine Tune-up	39
(2) Check and Service prior to Racing	40
(3) Racing Variables	40
VII. Wiring Diagram	45

# **I. Features and Specifications**

## **1. Features**

### **(1) High-performance Single Cylinder Engine**

The Yamaha Enduro 250 DT1C utilizes a powerful, two-stroke 250 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 provides superior engine lubrication that extends the service life of 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 to three positions. The rider can adjust spring tension to compensate for varying weights, speeds, and road conditions.

### **(6) Front Fork Design**

The Yamaha Enduro 250 DT1C employs a front fork design well-known for its strength and superior handling characteristics. Its use assures the rider of the ultimate suspension for even the roughest terrain.

### **(7) Speedometer and Tachometer**

A separate Speedometer and Tachometer is standard equipment.

The individual units are separately mounted for maximum visibility.

As an added feature the speedometer has an odometer which can be reset by tenths to zero for trip or enduro purposes.

#### **(8) Tires**

The Yamaha DT1C is fitted with Dunlop Trials Universal Tires as standard equipment. This particular tread is one of the most versatile available and gives maximum trail traction, yet is compatible with road usage.

#### **(9) Carburetor Starter Feature**

Yamaha's starter jet feature is already well-known for providing easy starting. Equipped with this unique carburetor, the Yamaha DT1C is quick starting under all conditions.

## 2. Specifications

### Performance & Specifications: DT1C

<b>Dimensions:</b> Overall length Overall width Overall height Wheelbase Min. ground clearance	81.1 in. 35.0 in. 44.5 in. 53.6 in. 9.6 in.
<b>Weight:</b> Net	232 lbs
<b>Performance:</b> Max. speed Fuel consumption (on paved level roads) Climbing ability Min. turning radius Braking distance	73 mph or more (std.) 94 mpg @ 25 mph 35° 82.6 in. 40 ft./30 mph.
<a href="http://www.legends-yamaha-enduros.com">www.legends-yamaha-enduros.com</a>	
<b>Engine:</b> Model Type Lubricating system Cylinder Displacement Bore × Stroke Compression ratio Max. power Max. torque Starting Ignition method	DT1 2 stroke gasoline, Separate lubrication (Yamaha Autolube) single, forward inclined, 5-port 15 cu., in. (246 cc) 2.77 × 2.52 in. (70 × 64 mm) 6.8 : 1 23 BHP/7,000 rpm 17.5 ft-lbs/6,500 rpm Primary-coupled kick starter system Flywheel magneto ignition system

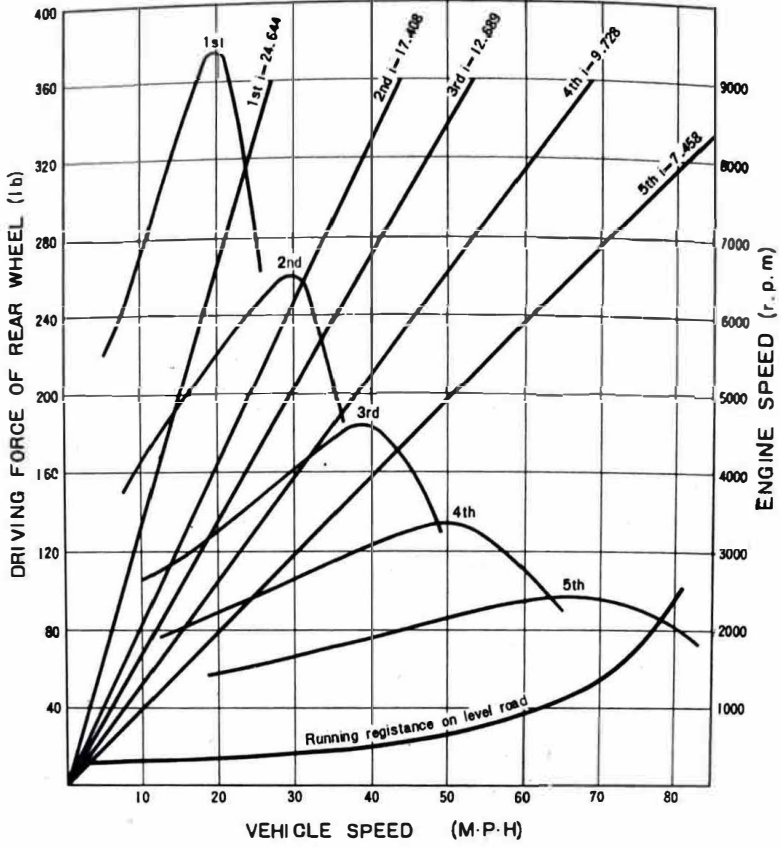
<b>Carburetor:</b> Type M.J. J.N	VM26SH #160 5D1-3 stages
<b>Air cleaner:</b>	Wet foam filter
<b>Spark plug:</b>	B-7E
<b>Chassis:</b> Frame Suspension Front Rear	Tubular-Double loop Telescopic Swinging arm
<b>Transmission:</b> Clutch Primary reduction system Primary reduction ratio Gear shifting type Gear ratio 1st 2nd 3rd 4th 5th Secondary reduction system Secondary reduction ratio	Wet, multiple-disk Gear 3.095 (65/21) Constant mesh, 5 speed 2.533 (Total r. ratio 24.644) 1.789 (Total r. ratio 17.408) 1.304 (Total r. ratio 12.689) 1.000 (Total r. ratio 9.728) 0.767 (Total r. ratio 7.458) Chain 3.143 (44/14)
<b>Steering:</b> Steering angle Caster Trail	49° 60.5° 5.12 in.

<b>Tire size:</b> Front Rear	3.25-19-4PR 4.00-18-4PR
<b>Lighting:</b> Headlight Taillight Stoplight Meter light	6V 35W/35W 6V 5.3W 6V 17W 6V 3W × 2
<b>Battery:</b> Model No. Capacity	MV1-6D 6V 2AH
<b>Dynamo model:</b>	FZA-IDL
<b>Tanks:</b> Gasoline tank capacity Oil tank capacity	2.5 gal. 1.7 qt.

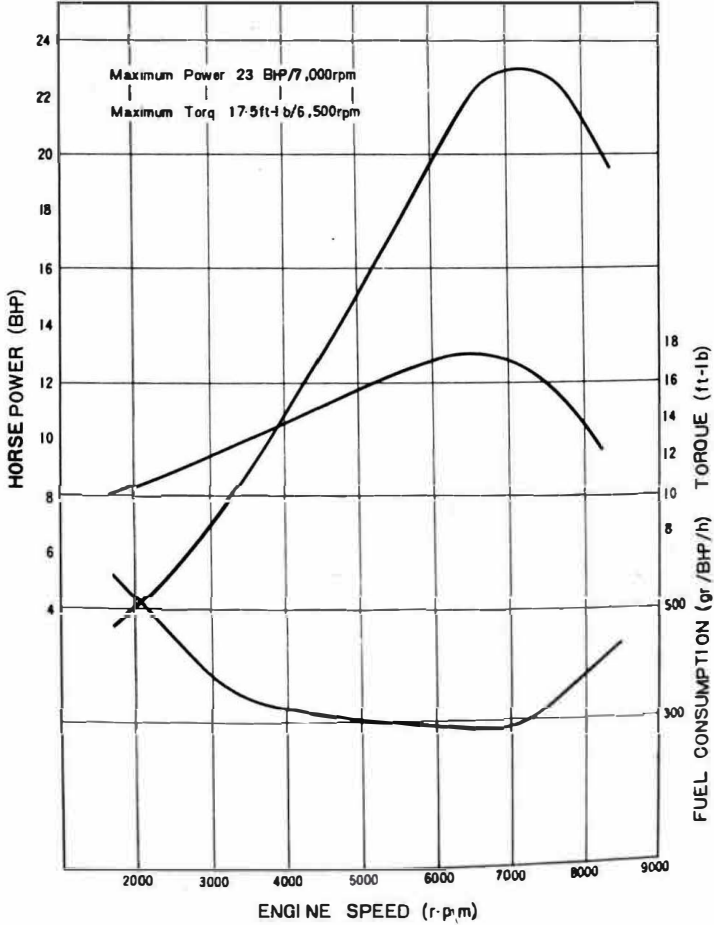
[www.legends-yamaha-enduros.com](http://www.legends-yamaha-enduros.com)



## 250 DTIC DRIVING PERFORMANCE CURVES



## 250 DTIC ENGINE PERFORMANCE CURVES



## **II. Yamaha Autolube**

### **What is Yamaha Autolube ?**

Yamaha Autolube is an automatic lubrication system which obsoletes the conventional two-stroke premixing system. Oil stored in the oil tank is metered automatically to the engine, by an oil pump, with the quantity varying according to engine speed and load.

The heart of the system is the compact, precision-built oil pump. Driven off the engine crankshaft through reduction gears, the varying oil needs are regulated by the pump which feeds the oil directly to the engine. Regulation is controlled through engine rpm's and throttle setting.

### **Features:**

Yamaha Autolube eliminates the lubrication problems peculiar to two-stroke engines with the conventional "pre-mixing" system. Oil is never contaminated by gasoline prior to delivery to the engine, nor is it subject to de-naturing through storage in the gas tank.

#### **1. The Autolube system results in:**

- Oil consumption up to 1/3 LESS than that of previous lubrication systems.
- Greatly reduced carbon build-up.
- Reduced exhaust emission.

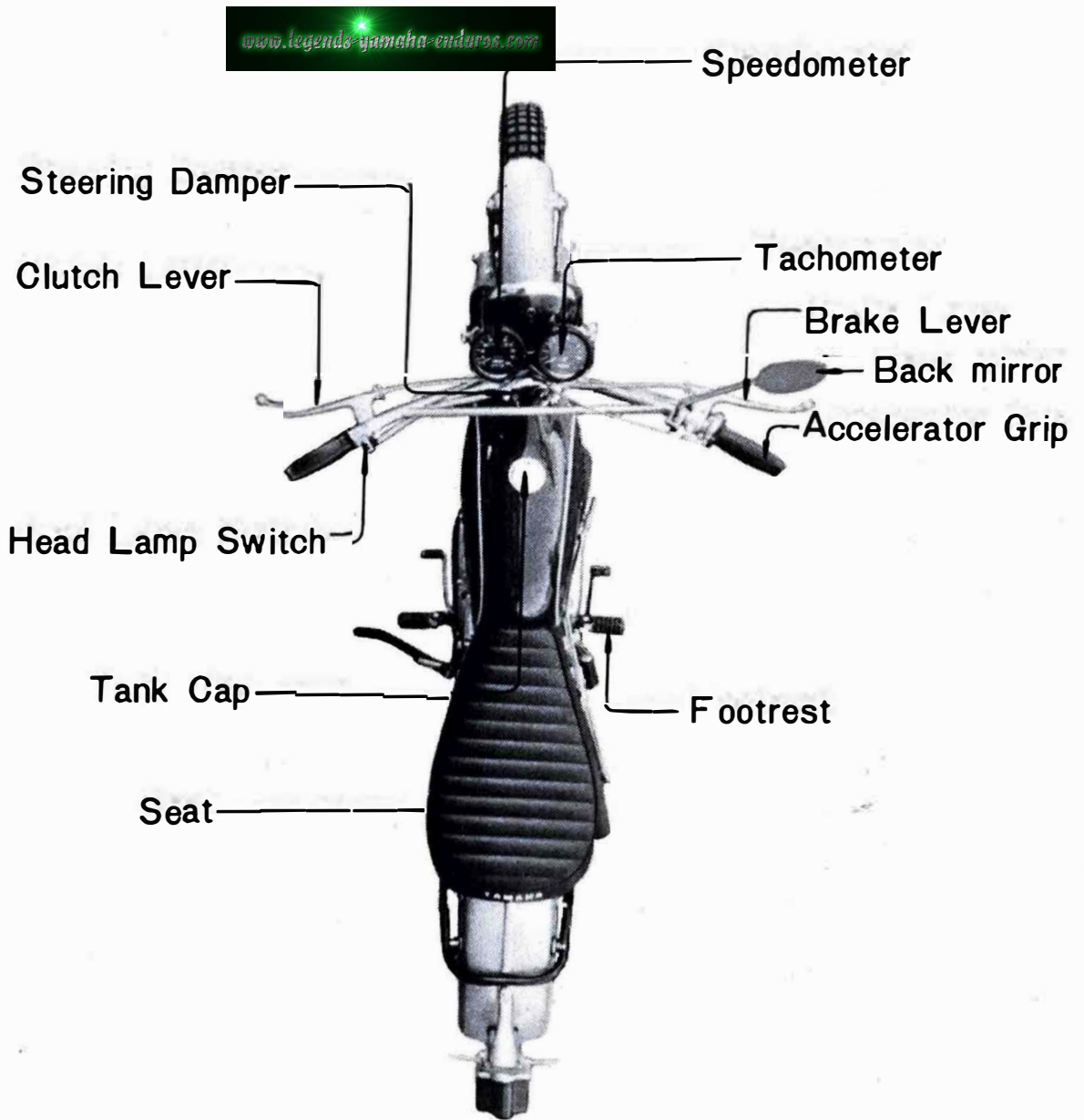
#### **2. The Autolube system provides:**

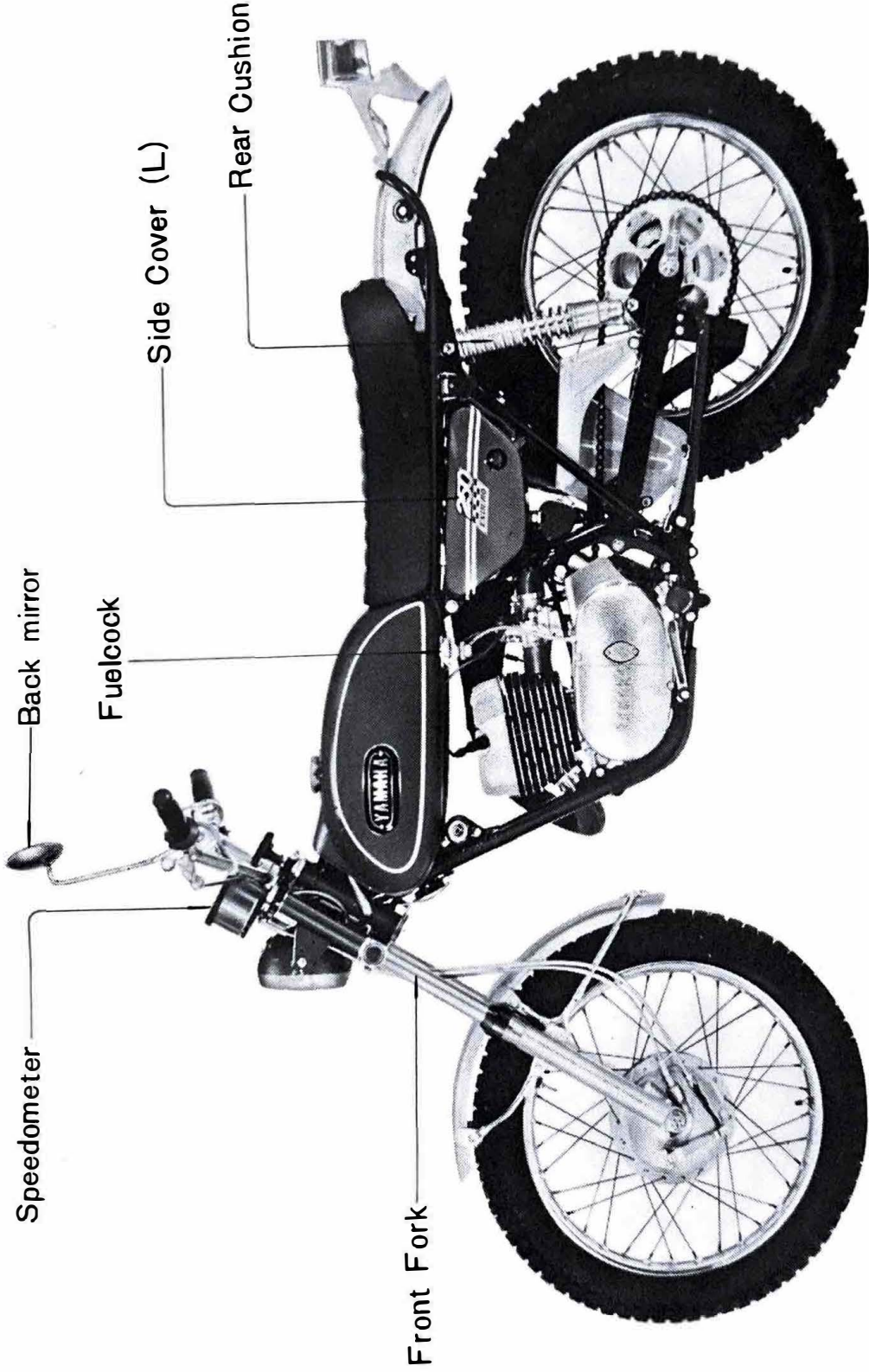
- Fresh oil supply
- Smooth lubrication due to large oil particles
- No worries about the quality of oil and oil-fuel mixing ratios

#### **3. The Autolube system means:**

- Fuel- "straight" gasoline only
- No pre-mixing of oil and gasoline

### III. Nomenclature





Speedometer

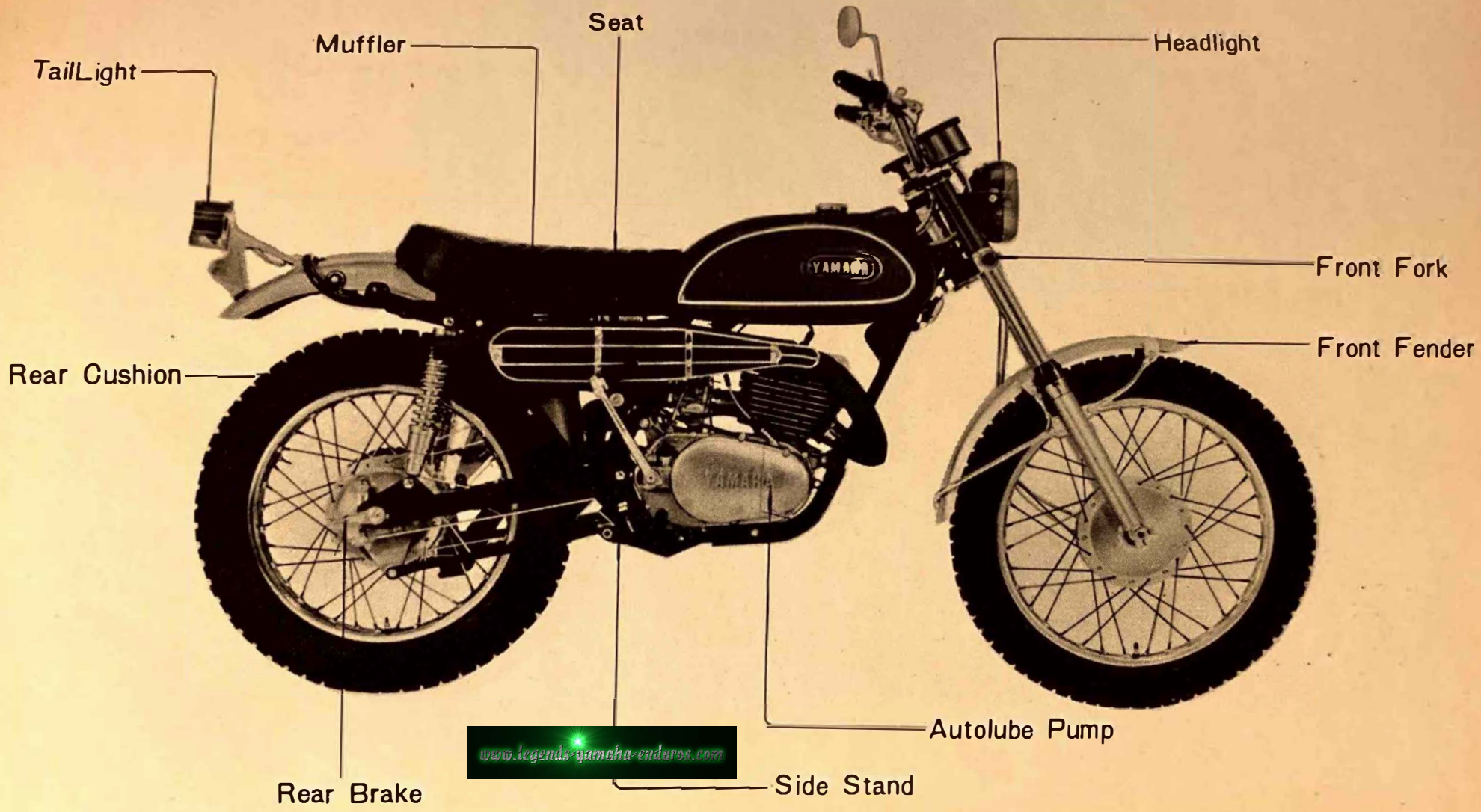
Back mirror

Fuelcock

Side Cover (L)

Front Fork

Rear Cushion



## **IV. Basic Instructions**

### **1. Gasoline and Oil**

The Yamaha Enduro 250 DT1C, equipped with the Yamaha Autolube system uses straight gasoline as fuel.

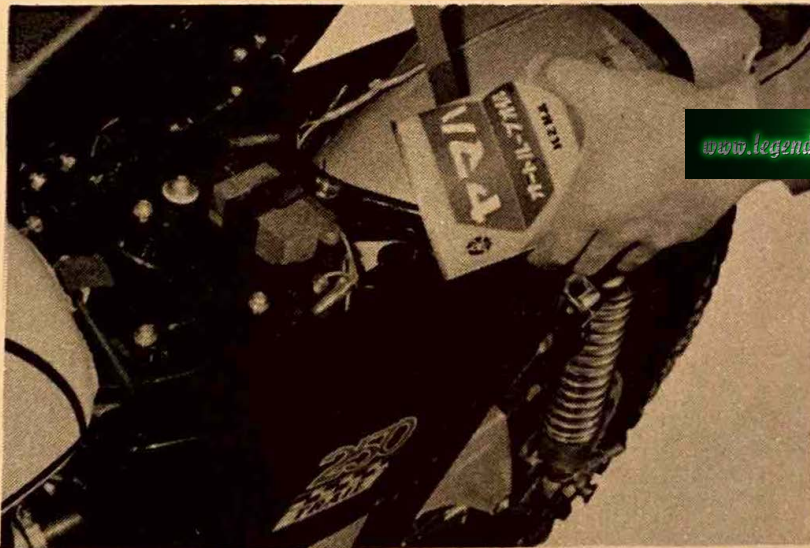
**Gasoline:** Use gasoline of 90 octane rating or more.

**Oil:** Use oil for lubrication.

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

#### **[Autolube Oil]**

The Yamaha Autolube Oil (Yamalube), 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 Equipment**

#### **(1) Main Switch**

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

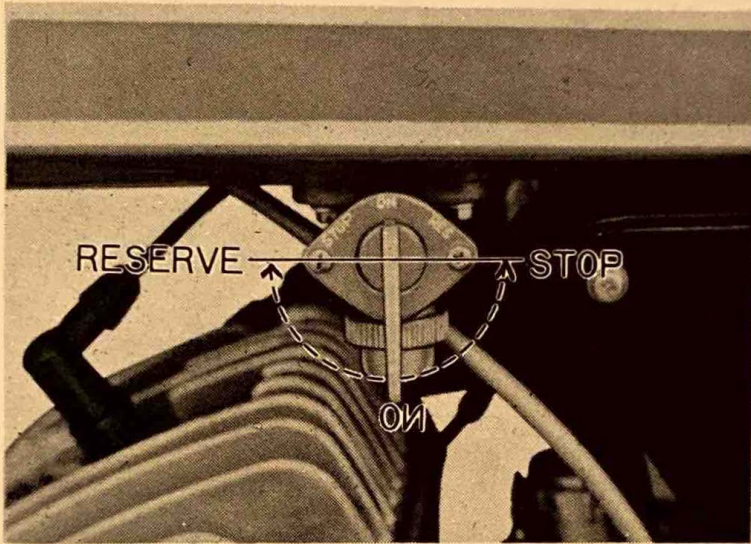
The following chart shows the key positions at which the various system are switched on or off. (The circle (o) denotes "Switch on".)

	OFF	I	II	Instructions
Engine		○	○	To start the engine, kick the kick pedal.
Neutral light		○	○	The change pedal is in neutral.
Meter lamp			○	The engine is running.
Headlight			○	The engine is running.
Taillight			○	
Stoptlight		○	○	The brake is applied.
Horn		○	○	The horn button is depressed.



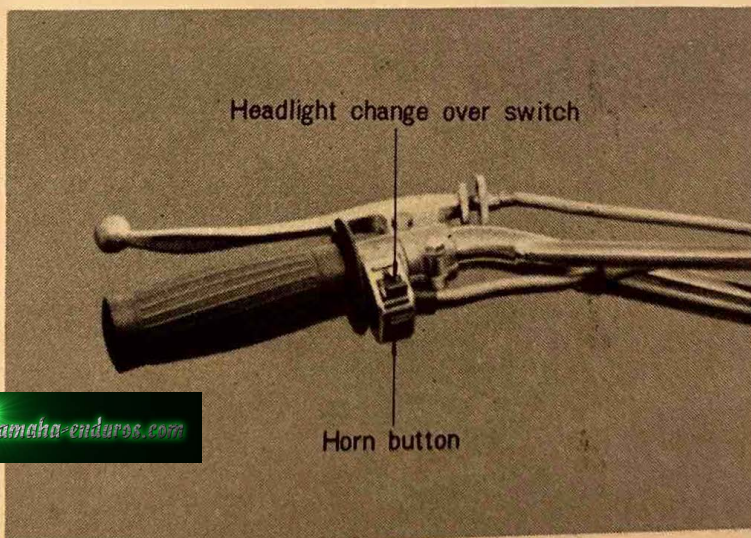
## (2) Fuel Petcock

To allow the fuel to flow into the carburetor, set the fuel petcock lever to ON. 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

- a. To sound the horn, depress the horn button.
- b. To raise the head light beam, pull the switch toward you. To lower the beam, push the switch toward the front.





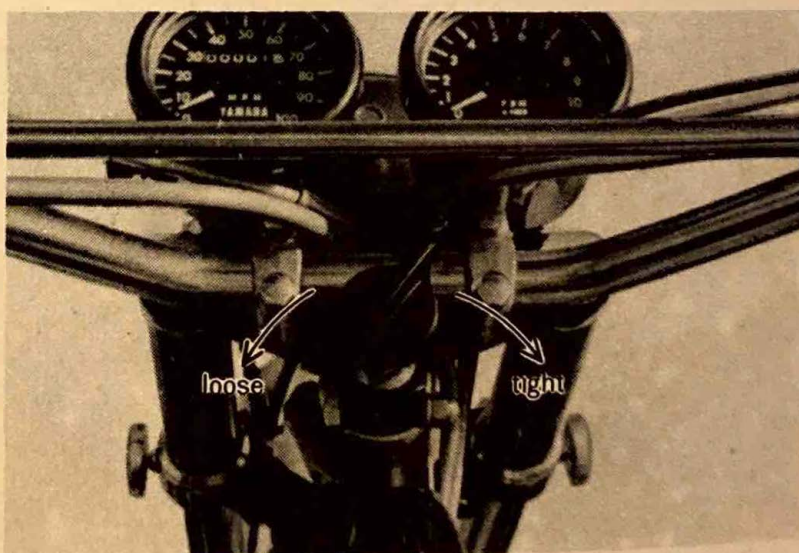
#### (4) Trip Total Meter

A trip total meter is built in the speedometer. It is designed to total the mileage of each trip. Before starting a trip, set the trip total meter to the zero position.



#### (5) Steering Damper

The steering damper is adjustable to suit various conditions and rider preference. Turning the damper clockwise increases the friction loading.

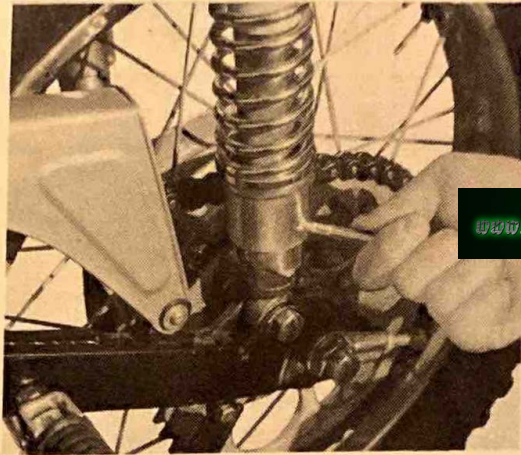


#### (6) Rear Cushions

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

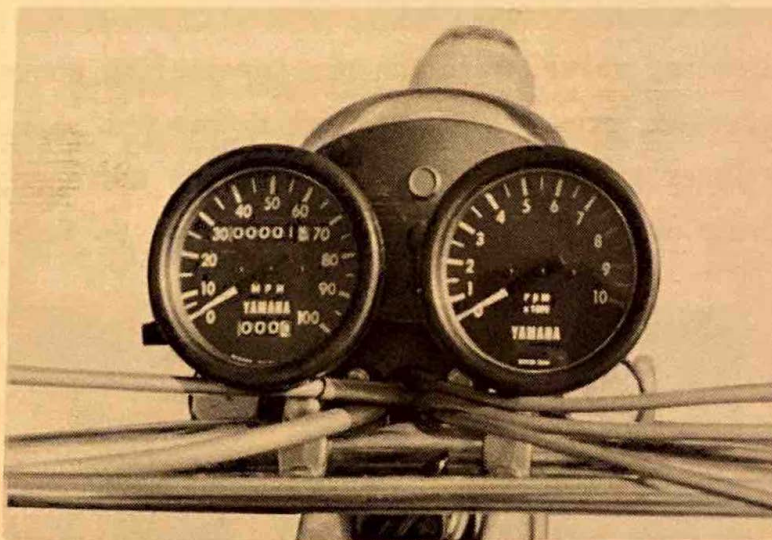
○ How to adjust the rear cushion

Insert the screwdriver (service tool) butt end of the blade into the adjusting hole and then turn it in order to change the position of the toothed notch.

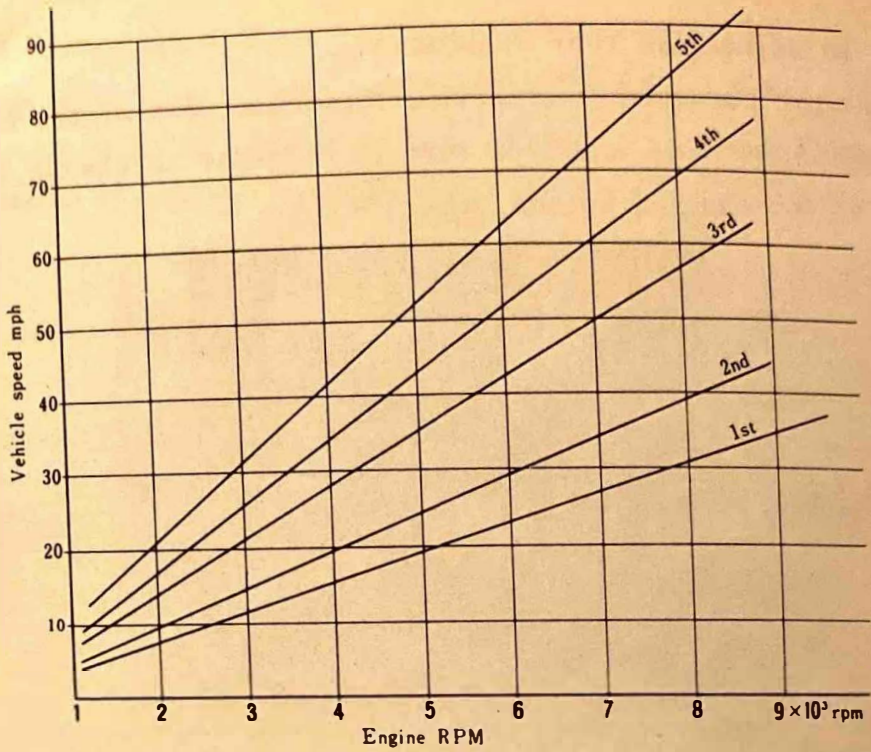


(7) How to Read the Tachometer

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 DT1C is designed to run best in the power range between 3,000 rpm and 7,000 rpm.

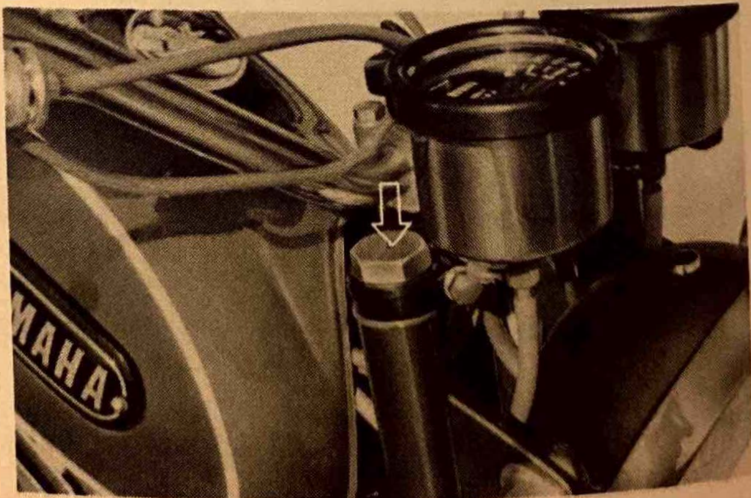


The relationship between engine RPM's and gears is shown in the diagram on the next page.



### (8) Adjusting the Front Fork Cushion

In order to adjust the volume of air inside the front fork inner tube, the cap bolt on the top end of the front fork is provided with an air adjusting valve. With the pin (projecting above the cap bolt head) depressed, press the front fork downward. The air is bled from the inner tube, and the cushion can be softened. It is advisable to draw out the air to adjust the cushion to your satisfaction.



### 3. Pre-operation Check

You should check the following points before 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 or SAE #30 detergent motor oil.



(3) Is the tire pressure correct ?

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

Correct tire pressure:

Front-13 lbs/in<sup>2</sup> (0.9 kg/cm<sup>2</sup>)  
Rear -16 lbs/in<sup>2</sup> (1.1 kg/cm<sup>2</sup>) } For on-the-road-riding

Front-8.5 lbs/in<sup>2</sup> (0.6 kg/cm<sup>2</sup>)  
Rear -10 lbs/in<sup>2</sup> (0.7 kg/cm<sup>2</sup>) } For off-the-road-riding

(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 engine). Check to see if the stoplight is functioning.

(5) Do the lights and horn function well ?

Check the horn, flasher light, stoplight, headlight, meter lamp, etc.

## 4. Operation

### (1) Starting the Engine

The Yamaha Enduro 250 DT1C 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

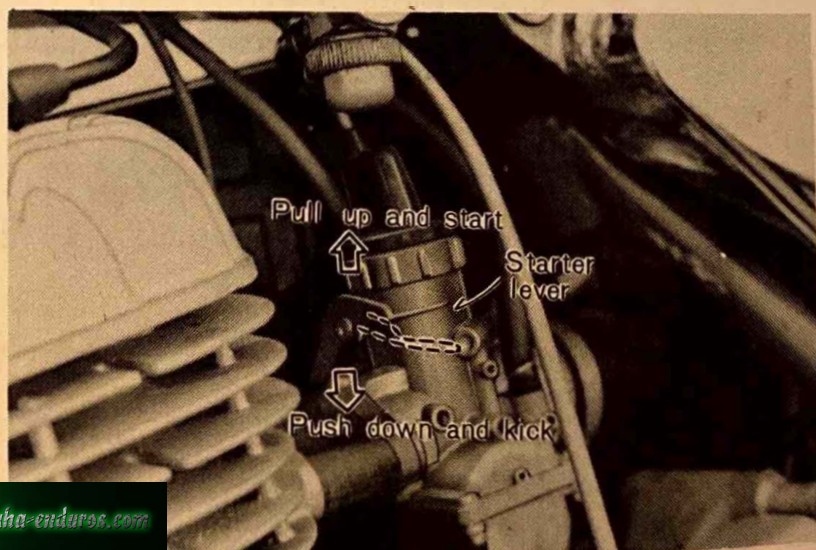
- Turn the fuel cock lever to the "ON" position.
- Insert the main switch key and turn it to the "Ignition" position. Make sure the neutral light is on.

The 250 DT1C 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 first 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 has started with the starter lever depressed, release it after starting. 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 from your engine.

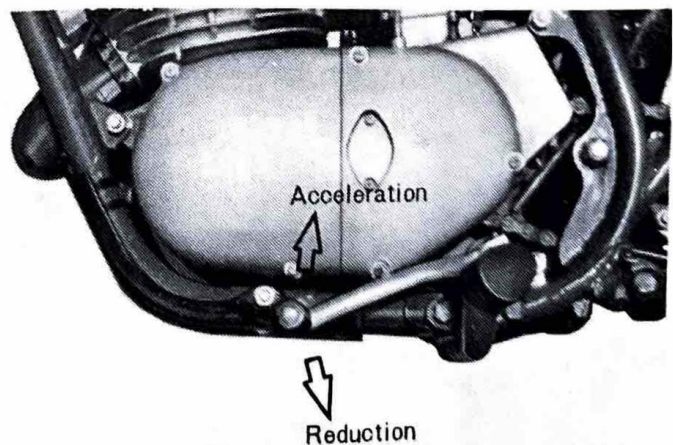
## (2) Operation Procedure

### Shifting Gears

The Yamaha 250 DT1C 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 into 1st 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  
LOW



## Acceleration

- Pull in the clutch lever to disengage the clutch.
- Depress the toe section of the change pedal down into LOW.
- Slowly twist the accelerator grip (the engine speed begins to increase), and release the clutch lever gently. Done properly, the machine will accelerate smoothly.

## Shifting

After starting off, accelerate to approximately 15 mph (20 km/h)

- Disengage the clutch while closing the accelerator grip.
- Shift into SECOND by raise in 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 30~35 mph (50 km/h) and shift into THIRD.
- Decelerate by reversing the above procedure. Close the accelerator grip, disengage the clutch, and then depress the change pedal.

## Off-the-road Riding

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

Parts to be removed: Headlight, taillight, speedometer, tachometer, battery and side stand.

### Caution on Riding over Paved Roads at High Speeds:

The DT1C is equipped with tires having a block pattern. As a result, the area where the tire contacts the ground is smaller compared with other types of tires. Therefore, take care that your motorcycle does not slip 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. Applying only one brake may cause skidding or overturning.

## 5. Break in Procedure

To secure a longer life for your Yamaha 250 DT1C, 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 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. 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 motorcycle but prevents any machine trouble.

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, that 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.

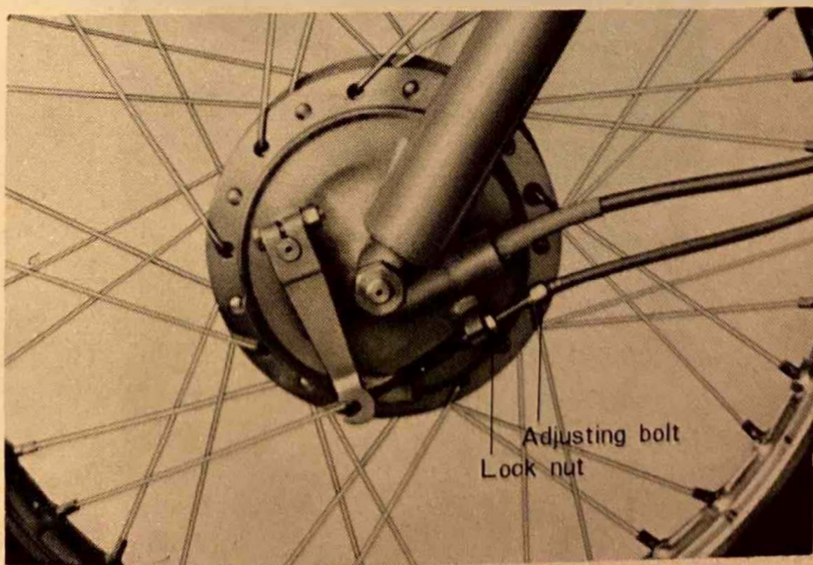
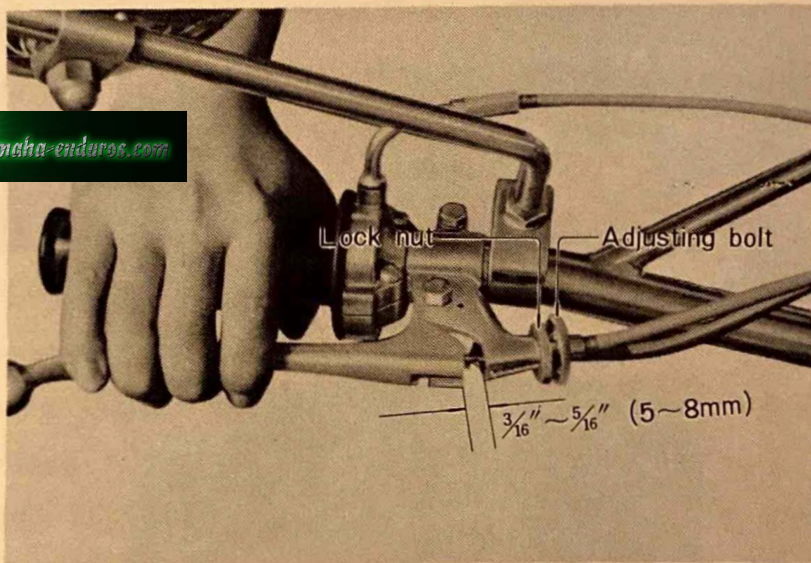
## 2. Inspection and Adjustments

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

### Adjusting the Brakes

#### Front Brake:

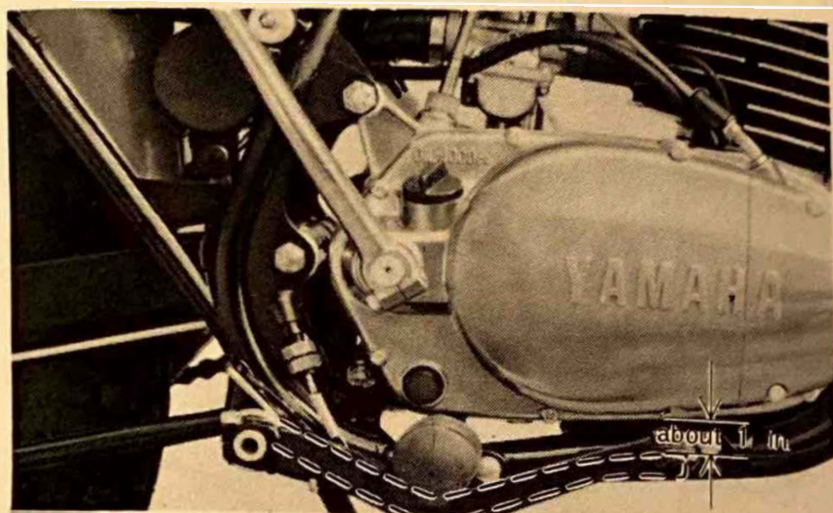
The correct free play of the front brake lever is 0.2 to 0.3 in. (5 to 8 mm). To adjust, turn the cable adjusting bolt on the front brake hub, and/or the adjuster located at the lever. After adjustment, be sure to tighten the lock nut fully.



## 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 one-half turn at a time.

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



**NOTE:** This adjustment must be checked any time the chain is adjusted or the rear wheel is removed.

## Checking the Brake Lining:

Disassemble the wheel assembly every 3,000 miles (5,000 km), 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

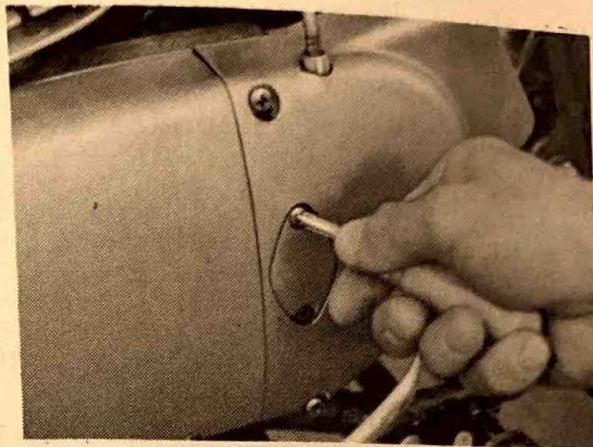
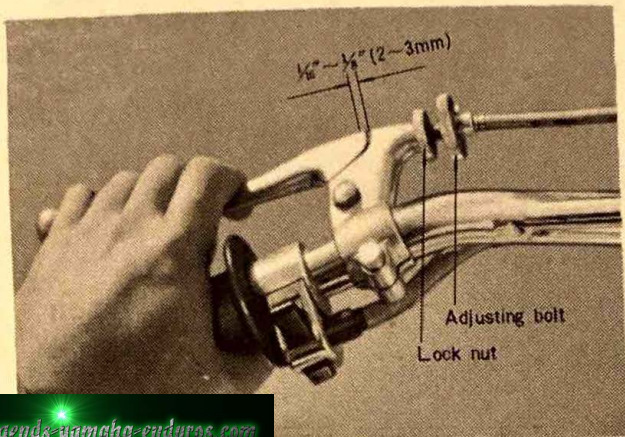
The clutch lever should have .080 to .120 in. (2 to 3 mm) free play to maintain full pressure against the clutch facing. If the play is excessive, the clutch will not disengage completely. If the free play is insufficient, the clutch will slip.

### How to Adjust the Clutch:

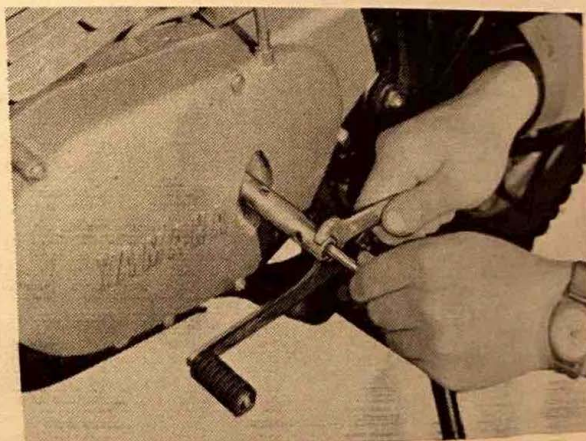
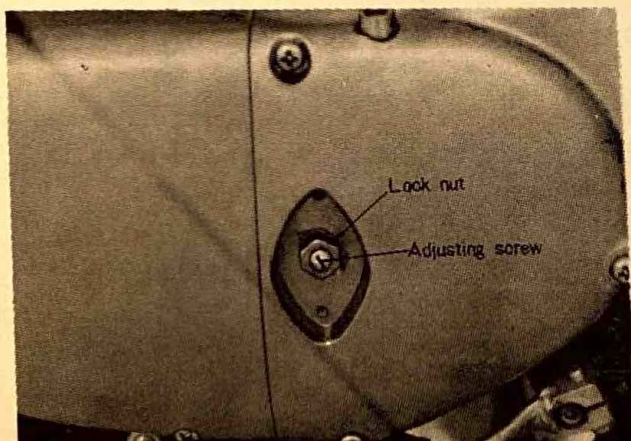
To adjust the clutch, turn the adjusting bolt attached to the clutch lever holder. After the adjustment, fully tighten the lock nut.

### Precision Adjustment Method:

- a. Remove the clutch adjusting cover from the left side of the crankcase cover.
- b. Loosen the clutch adjusting screw (turn it to the left), and then tighten it slowly by turning it clockwise.
- c. Back it off  $\frac{1}{4}$  turn from a lightly seated position, and lock it with the lock nut.
- d. Then adjust the play of the clutch cable with the adjusting bolt attached to the clutch lever holder.



[www.legends-yamaha-enduros.com](http://www.legends-yamaha-enduros.com)

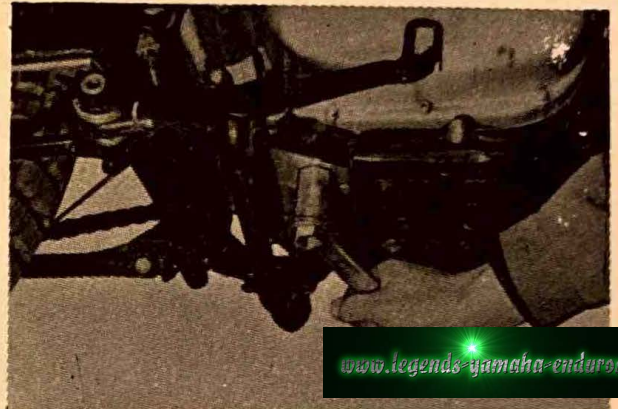
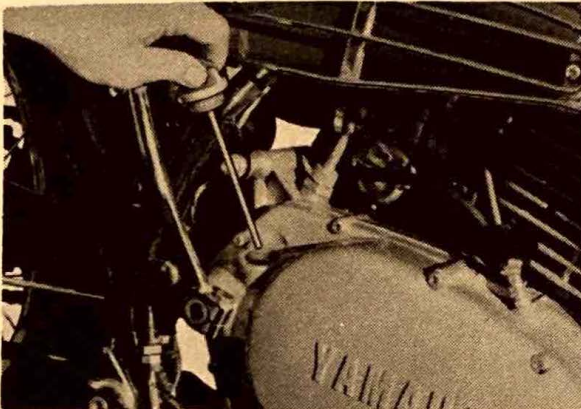


## Replacing the Gear Oil

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

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

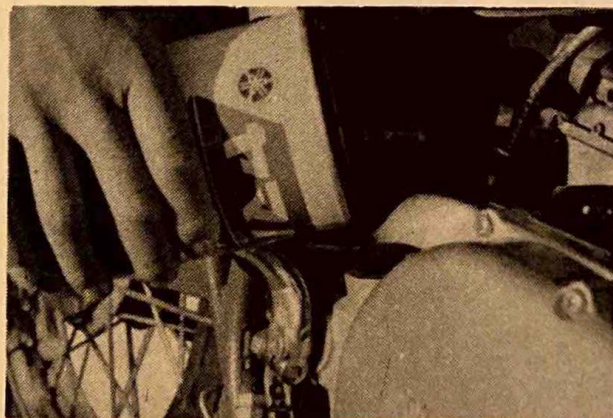
To drain the oil from the bottom of the crankcase, remove the oil drain plug.



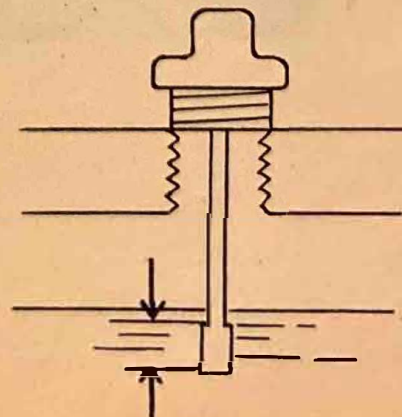
After draining the oil, fully tighten the oil drain bolt, and fill with new oil up to the specified level.

Oil.....SAE 10 W/30 detergent motor oil.

Oil Amount.....1 qt. (1 litre)



Keep the oil level  
between these levels.



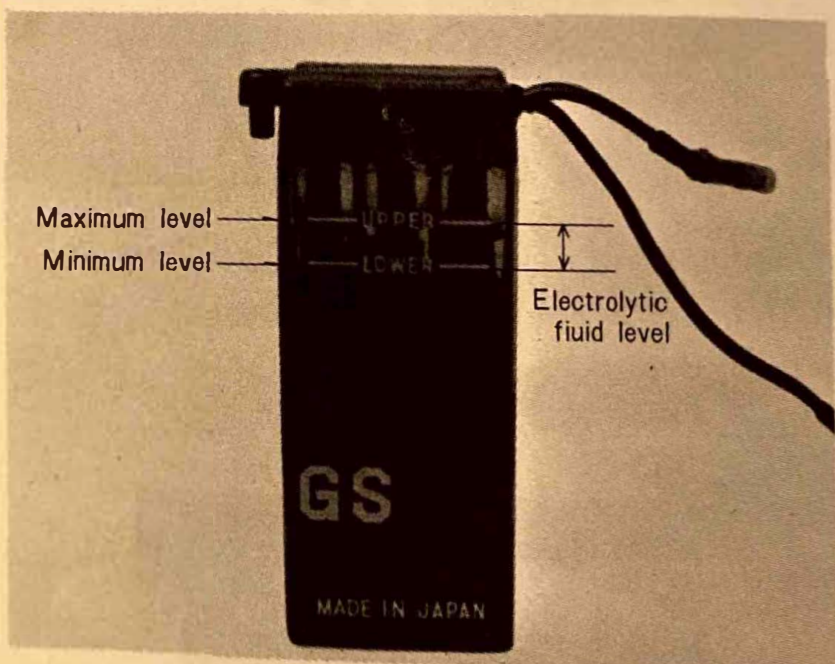
### Checking the Battery electrolyte

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

Check the overflow pipe to make sure it is not plugged or pinched shut.

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

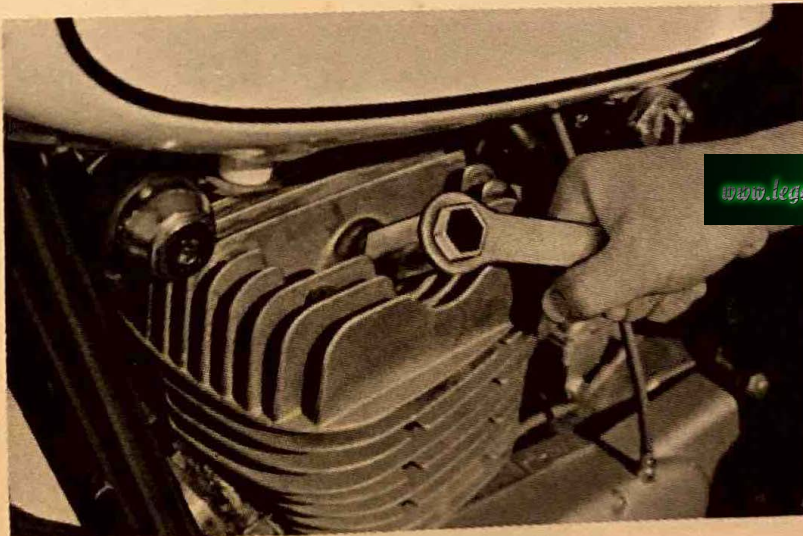
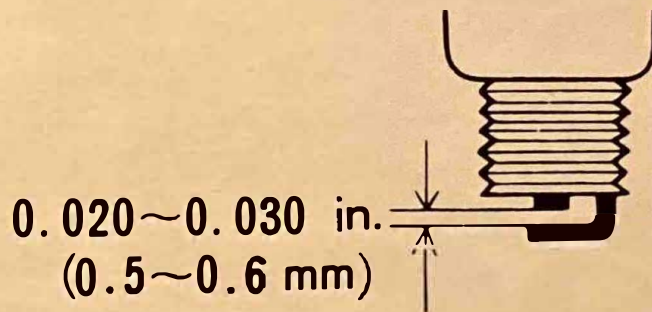
A spark plug ignites the air-fuel mixture in the cylinder. A dirty plug causes hard starting, engine misfiring and other problems.

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 0.020~0.024 in. (0.5~0.6 mm).

Standard Spark Plug : B-7E

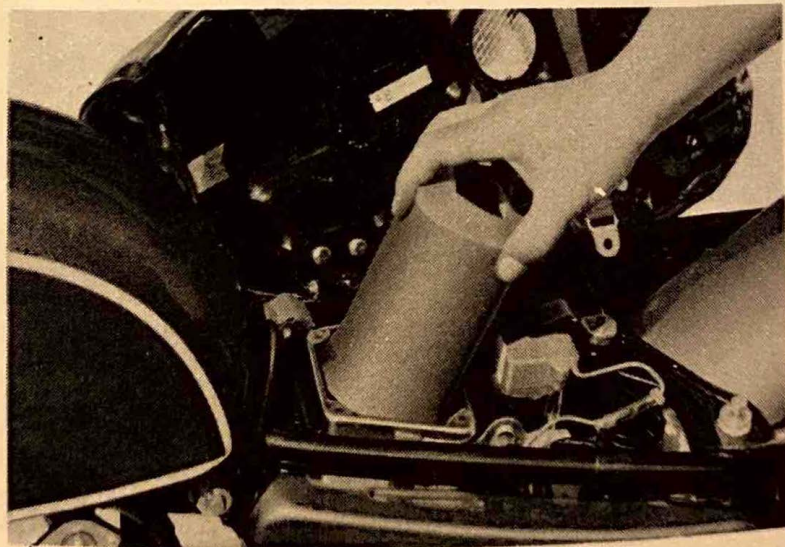
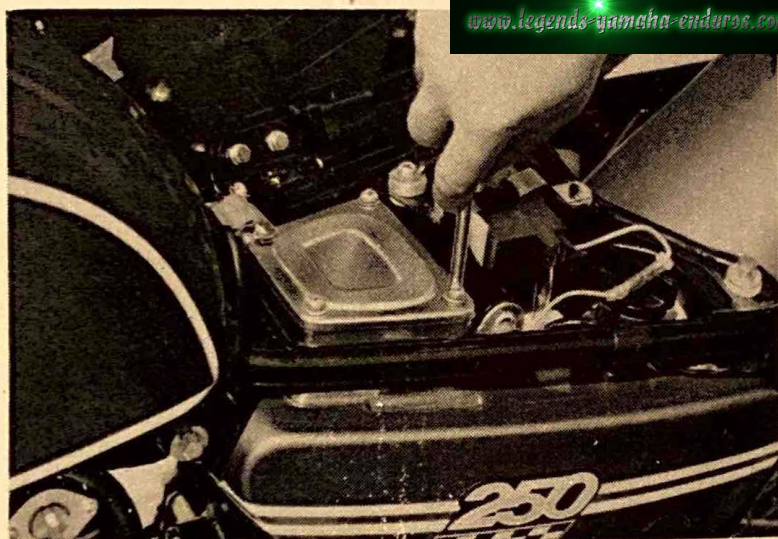
- Porcelain around the center electrode should be a light tan color.
- Replace the spark plug if the electrodes and porcelain are eroded or chacked. If your machine is frequently ridden at low speeds, the spark plug will become somewhat oily and sooty. Replace it with a hotter type.





## 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. To remove the air filter, open the seat cover and remove the air cleaner mounting screws. The element can then be removed. The DT1C's air cleaner is easily cleaned. Wash it in gasoline and then soak it in a mixture of gas/oil (approximately 20:1). Squeeze all surplus fluid from the filter before reinstallation.



## Checking the Carburetor

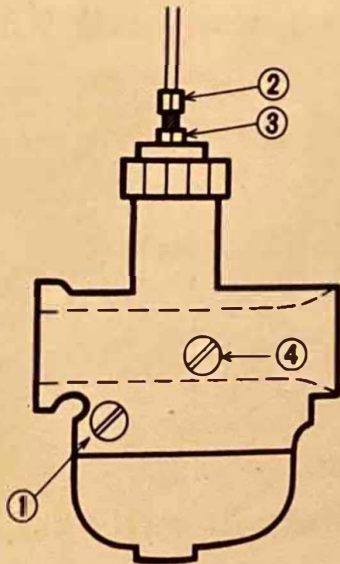
Each carburetor is set by the factory after careful tests.

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

### a. Idling Speed Adjustments

- Tighten the pilot air screw (1), until it lightly seats, then back it off it  $1\frac{1}{2}$  turns.
- Slightly loosen the adjusting screw of the throttle cable A connected to the accelerator grip, and start the engine.
- After warming up the engine, turn the throttle stop screw (4) so that engine speed increases to 1,300 rpm.

After this adjustment, loosen lock nut (3) to adjust the play of throttle cable B to  $\frac{1}{32}$ " in. (0.5~1.0 mm); and turn throttle cable adjuster (2) while pulling throttle cable B to check the adjustment. Then lock throttle cable B with lock nut (3).

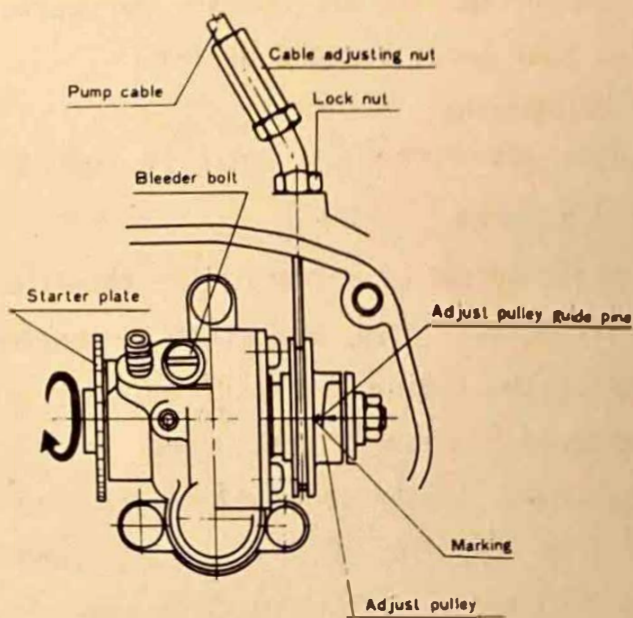


### b. Adjusting the Pump Cable

After adjusting the carburetor, adjust the pump cable which is 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 with 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.

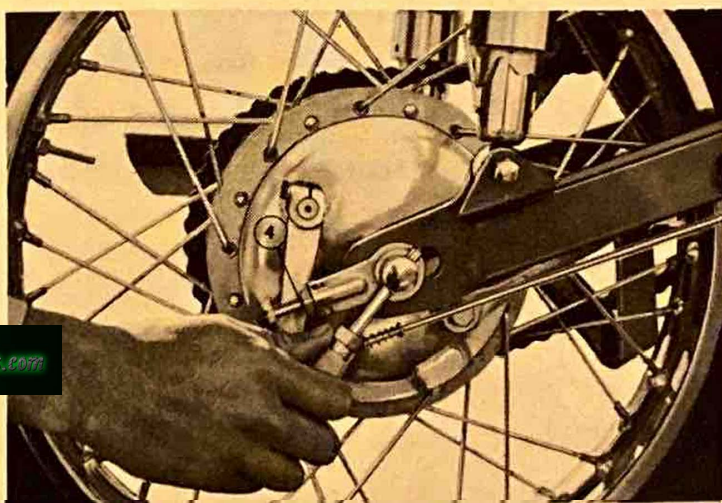
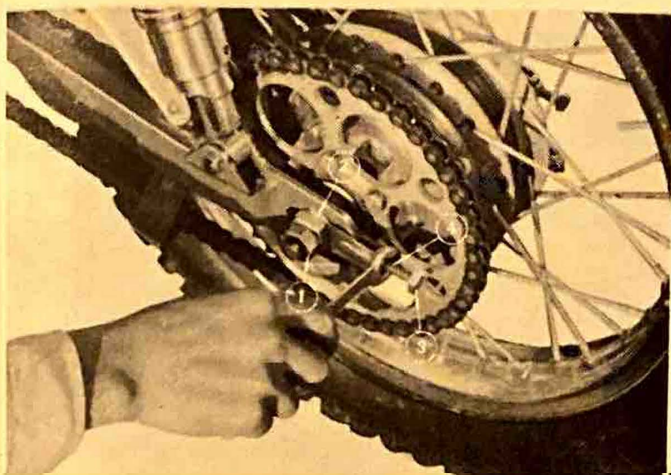


## Adjusting the Drive Chain

The drive chain should have approximately 0.8 in. (20 mm) up and down play at the center of the lower section with the rear wheel on the ground. Since a dirty chain causes excessive sprocket wear, 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 axle outside (1) and inside (2) nuts.
- Loosen the chain adjusting bolt lock nuts, (4) 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 lock nuts (4), and axle nuts (1) & (2).
- Adjust the play of the brake pedal.
  - \* After these adjustments, check the play of the brake pedal and function of the stoplight.



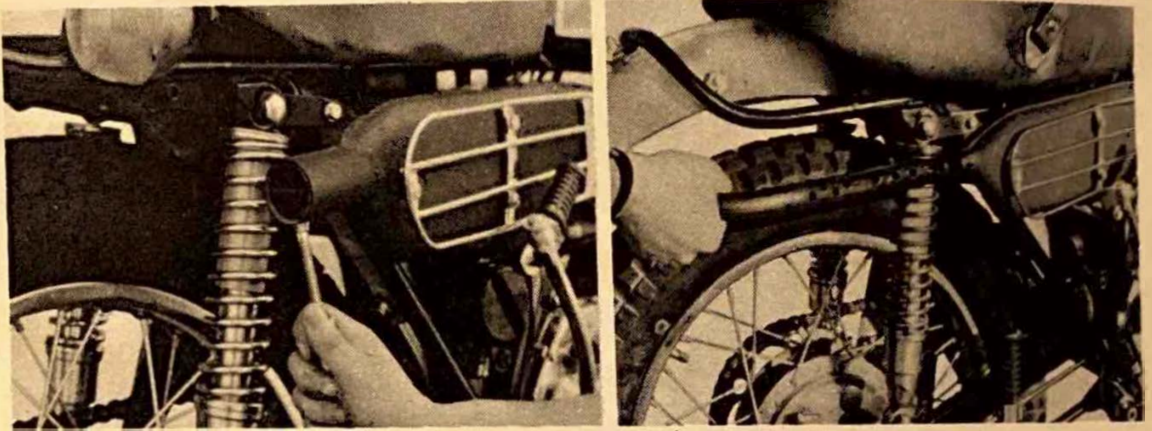
[www.legends-yamaha-enduros.com](http://www.legends-yamaha-enduros.com)

## 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 bore for clogging. If it is 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.

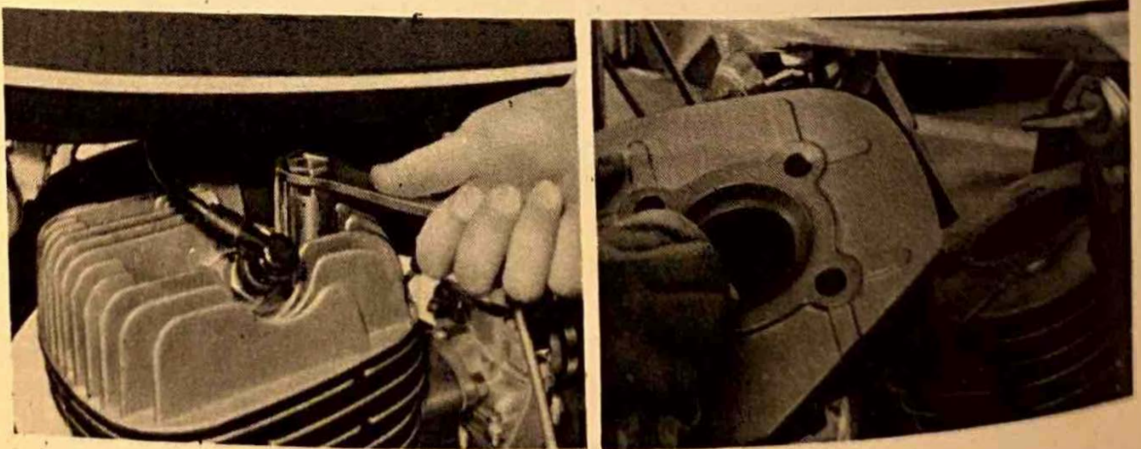
a. Remove the cylinder head and remove carbon from the combustion chamber.

b. Remove carbon from the piston head.

To clean them, use a dull-edged scraper and rags dampened with solvent.

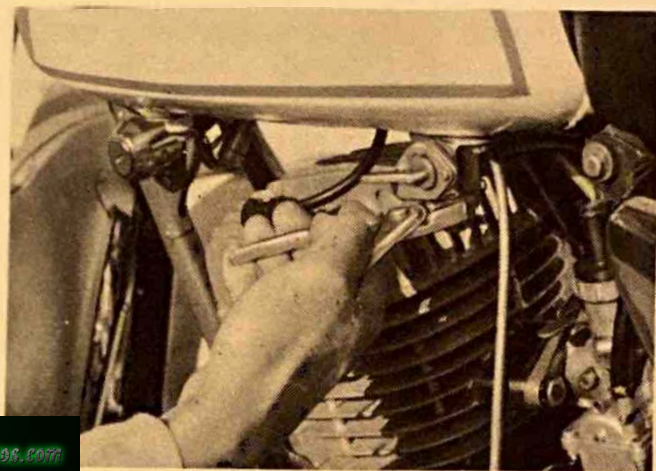
c. The head bolts must be torqued when the head is reinstalled.

Torque the bolts in pattern to a setting of 30 ft/lbs.



## 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 run 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.



[www.legends-yamaha-enduro.com](http://www.legends-yamaha-enduro.com)

## Retightening Screws, Bolts and Nuts

Check the screws, bolts and nuts in the parts listed below and re-tighten them if necessary.

Front and rear wheels	Engine mountings
Foot rests	Carburetor
Swing arm shaft	Air cleaner cover
Muffler	Exhaust ring 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	motor oil
4	Rear brake cable	600	2,000	"
5	Accelerator grip	600	2,000	cup grease

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

## VI. Racing

### 1. Conversion of the Yamaha DT1C for racing

The Yamaha Enduro 250 DT1C 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.

#### ○ List of Alternate Parts

The following alternate parts for racing are available through authorized dealers.

No.	Parts No.	Parts Name	Quantity	Remarks
1	214-11111-70	Head, cylinder	1	
2	94700-00016	Plug, spark	1	NGKB-9E (N)
3	214-11311-70	Body, cylinder	1	
4	214-11631-70	Piston	1	
5	214-11611-70	Ring, piston	1	
6	214-14101-70	Carburetor ass'y	1	VM30SH
7	161-15426-00	Cover, oil pump	1	
8	214-17819-10	Cap, housing	1	
9	214-17461-40	Sprocket, drive	1	14 Teeth
10	214-25446-10	Gear, sprocket wheel	1	46 Teeth
11	214-25448-10	Gear, sprocket wheel	1	48 Teeth
12	214-14610-70	Muffler	1	
13	94132-19609	Tire, front	1	3.25-19-4PR
14	94140-18070	Tire, rear	1	4.00-18-4PR

## (1) Engine Modifications

- First, remove all standard parts which are to be replaced with alternate parts. (Muffler, carburetor, cylinder head, cylinder, piston, etc.)

After removing these standard parts, check all other parts of the engine and install optional parts. Particularly, check the crankshaft ass'y for wear or other defects. Be sure to replace all packings, O rings and gaskets.

- Carefully install the tuning parts in the proper manner.

## (2) Chassis Modifications

- The modification of the chassis requires only the removal of those parts which are unnecessary for racing.

- All lighting may be removed.

The speedmeter and tachometer may be removed.

- Select sprocket wheels which are most suitable for the racing course conditions. A variety of sprockets are available.

## (3) Service Standards (Racing parts)

Piston clearance: 0.040~0.050 mm

Spark plug: Standard B-9E (N)

Ignition timing: B.T.D.C. 2.3 mm

Secondary reduction: Chain

Carburetor setting: Main jet #210

Needle jet 0-4

Pilot jet #80

Cut away 3.5

Number of turns backed off-Air screw 1/2

Fuel mixing ratio: 15: 1 (Without oil pump.)

130: 1 (Without oil pump.)



## 2. Miscellaneous(Racing)

### (1) Technical Information on Engine Tune-up

The engine must withstand severe operating conditions during a race. This requires the highest degree of durability. As a result, it is vital to check and service every part of the engine with special care.

Even a slight defect in the engine may result in serious trouble. Therefore, early detection of defects as well as complete servicing must be done carefully.

Like a brand new engine, any tuned-up engine requires a certain amount of break-in operation. Run the machine at 4,000~5,000 rpm for 5 to 10 minutes. Let it cool and repeat several times. Remove the spark plug and check it for discoloring after a short trial run. After 20 to 30 minutes of operation, remove the cylinder and check for uneven contact of the piston with the cylinder wall. If any "high spot" is found on the piston, smooth it off with #400 grit sandpaper soaked in solvent.

### (2) Check and Service prior to Racing

Take your time when servicing your machine prior to a race.

- Check the cylinder, piston, and crankshaft ass'y for any defects.
- Make sure that the carburetor is clean and correctly set.
- Check ignition timing, lead wire connection and insulation.
- Retighten screws, bolts and nuts in all parts.
- Check the cables.
- Clean the fuel tank and fuel cock.
- Adjust chain tension and oil it.
- Clean the air cleaner.
- Replace the gear oil.

### (3) Racing Variables

Some items of a racing machine will have to be changed by taking into consideration the following factors: straight portions and curves in the course, grade, road surface, condition, weather, temperature, and rider's driving technique.

All these must be determined by the rider himself after a series of trial runs.

#### Main Changes in Specifications

○ Carburetor setting: Standard #210

Select a main jet which results in good full throttle operation.

Always stay as rich as possible as the motor will run cooler.

○ Change in secondary reduction ratio: Standard: 3.143 ( $\frac{44}{14}$ )

Change the combination of the drive sprocket and sprocket wheel.

Drive sprockets: 14T, 15T

Sprocket wheel: 44T, 46T, and 48T

○ Change in spark plug: Standard: B-9E(N)

Select a spark plug by judging its color and condition.

It is necessary to use B-10E(N) when the engine tends to overheat.

B-8E(N), B-9E(N), B-10E(N)

○ Changing tire pressure: Change the tire pressure depending on the condition of the course.

#### Precautions

○ In case of riding in the sand where the rear wheel may slip excessively, or continuous riding at high rpm's, two head gaskets should be used.

○ It is necessary to use high-octane gasoline for racing. (100 +)

## Setting the ignition timing

1. Install the dial gauge in the cylinder head.

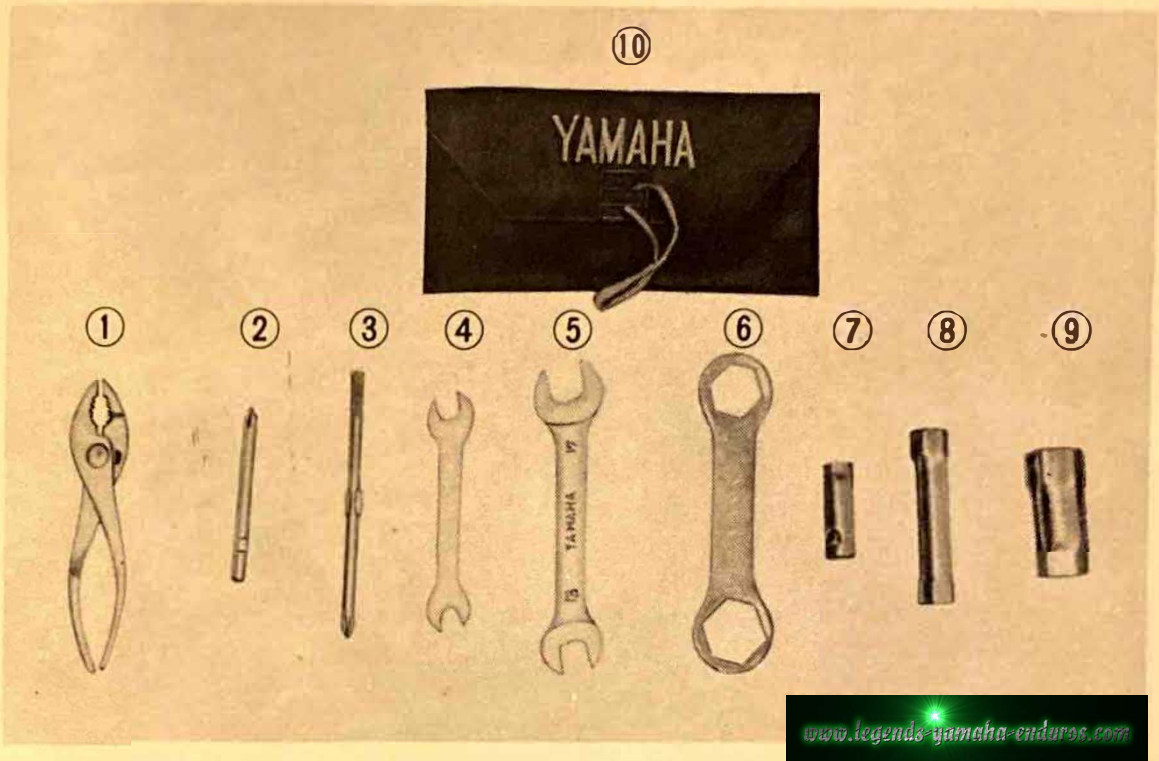
Note: The dial gauge can be used to time an engine fitted with a racing head because the spark plug hole is centered and is parallel to the cylinder bore. The standard head spark plug hole angles down, and therefore, the dial gauge cannot be used accurately.

2. Roughly align the red mark on the rotor with the pointer attached to the stationary plate.
3. Check to see if the points are clean and not pitted. They can be smoothed with 400 sandpaper or with an oilstone.
4. Connect a tester to the insulated breaker point and ground so that the exact opening and closing of the points can be measured.
5. Rotate the rotor so that the piston will be lowered 2.3 mm B.T. D.C.. At this point, loosen the breaker plate setting. Adjust the breaker plate so that the points just begin to open. Finally, tighten the breaker plate.

In addition to the alternate parts for racing listed in page 38, the followings are also available through authorized dealers.

No.	Parts No.	Parts Name	Quantity	Remarks
1	214-21510-70	Fender, front	1	
2	214-22210-70	Cushion, rear	2	
3	152-25139-00	Plug, blind	1	
4	94127-21071	Tire, front	1	2.75-21-4PR
5	94227-21031	Tube	1	"
6	94327-21024	Band, rim	1	"
7	94416-21038	Rim	1	"
8	214-25196-10	Spoke, inner	18	"
9	214-25197-10	Spoke, outer	18	"

## SERVICE TOOLS



1. Plier
2. ⊕ screwdriver
3. ⊕ ⊖ screwdriver
4.  $8^{\text{m/m}} \times 9^{\text{m/m}}$  spanner
5.  $13^{\text{m/m}} \times 17^{\text{m/m}}$  spanner
6.  $22^{\text{m/m}} \times 26^{\text{m/m}}$  double-ended spanner
7.  $10^{\text{m/m}}$  socket wrench
8. Screwdriver handle and  $13^{\text{m/m}}$  socket wrench
9.  $17^{\text{m/m}} \times 19^{\text{m/m}}$  socket wrench
10. Tool bag

# Stopping Distance

This figure indicates braking performance that can be met or exceeded by the vehicles to which it applies, without locking the wheels, under different conditions of loading and with partial failures of the braking system. The information presented represents results obtainable by skilled drivers under controlled road and vehicle conditions, and the information may not be correct under other conditions.

Description of vehicles to which this table applies: YAMAHA DT1-C  
Motor cycle

## A. Fully Operational Service Brake

Load

Light

185

Maximum

200

0      100      200      300

Stopping Distance in Feet from 60 mph.

# Acceleration and passing ability

This figure indicates passing times and distances that can be met or exceeded by the vehicles to which it applies, in the situations diagrammed below.

The low-speed pass assumes an initial speed of 20 mph and a limiting speed of 35 mph. The high-speed pass assumes an initial speed of 50 mph and a limiting speed of 80 mph.

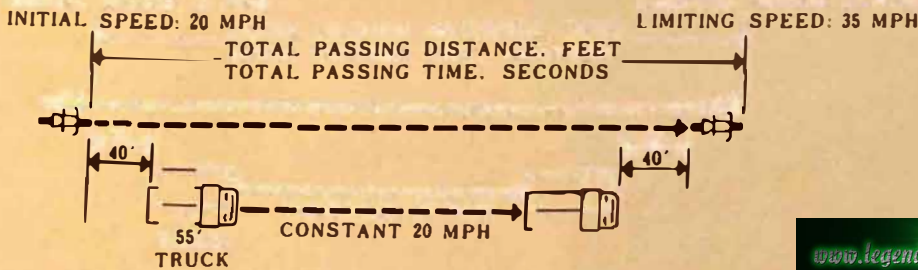
**NOTICE:** The information presented represents results obtainable by skilled drivers under controlled road and vehicle conditions, and the information may not be correct under other conditions.

Description of vehicles to which this table applies: YAMAHA DT1-C  
Motor cycle

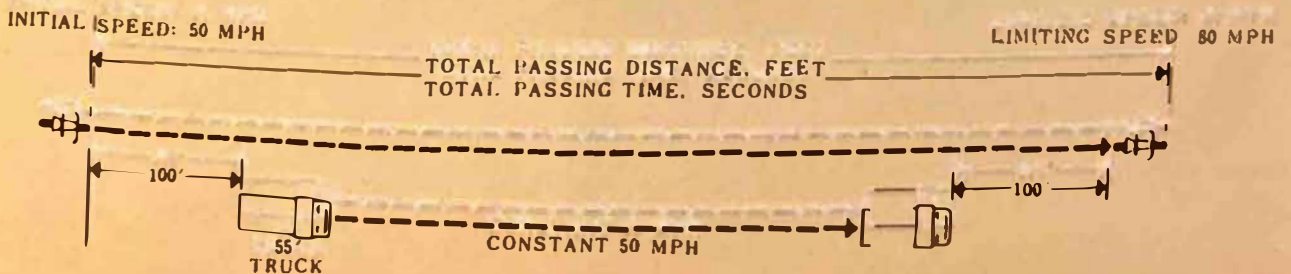
### Summary table:

Low-speed pass..... 350 feet; 7.2 seconds  
High-speed pass..... 1370 feet; 15.6 seconds

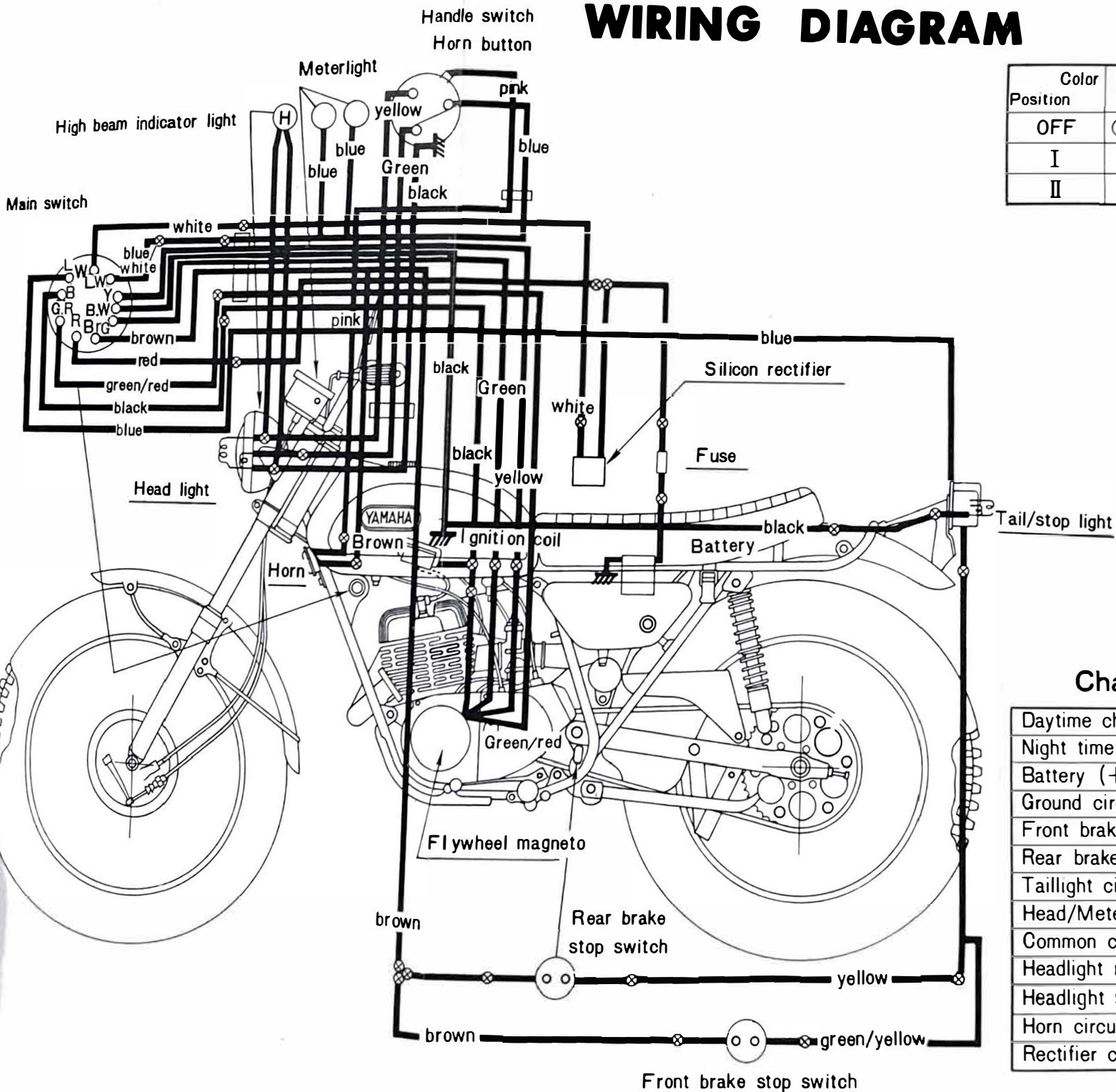
## LOW-SPEED



## HIGH-SPEED



# WIRING DIAGRAM



Color Position	E	B	R	Br	L	G	W	GR	LW	Y
OFF	○	○								
I			○	○		○	○			
II			○	○	○		○	○	○	○



## Chart of wire colors

Daytime charging circuit	Green
Night time charging circuit	Green/Red
Battery (+) circuit	Red
Ground circuit	Black
Front brake stoplight circuit	Green/Yellow
Rear brake stoplight circuit	Yellow
Taillight circuit	Blue
Head/Meter light circuit	Blue(L.W)
Common circuit	Brown
Headlight main circuit	Yellow
Headlight sub circuit	Green
Horn circuit	Pink
Rectifier circuit	White

# MEMO

[www.legends-yamaha-enduros.com](http://www.legends-yamaha-enduros.com)



[www.legends-yamaha-enduros.com](http://www.legends-yamaha-enduros.com)



**YAMAHA MOTOR CO., LTD.**

PRINTED IN JAPAN