

# YAMAHA

## Supplementary Service Information

### 250 Single Enduro



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



YAMAHA MOTOR CO.,LTD.

The YAMAHA Trail 250 DTI-the latest addition to the Yamaha line-is fully loaded with most wanted design features for riding mountains and desert trails for fun. Yet it is perfect for on-the-street riding, being provided with a complete street legal equipment.

Besides the safety and performance features, there are some attractive options available. The use of \*GYT parts allows the owner to convert the 250 DTI to a high performance scrambler with ease.

\*Genuine Yamaha Tuning

#### 1) **5-port Single Cylinder Engine**

The 250 DTI is equipped with Yamaha's first single-cylinder 250-cc engine featuring a unique 5-port iron-sleeved aluminum cylinder barrel. The new engine offers extremely high scavenging efficiency and steady performance at all speeds. The torque range allows instant and steady response from 2,500 RPM up.

#### 2) **Dependable Yamaha Autolube**

All Yamaha models employ the dependability-proven Yamaha Autolube. This unique automatic separate lubrication system brought a new era of safety and convenience to the world's motorcycle manufacturing industry.

#### 3) **5-speed Transmission**

The 5-speed transmission is easy to make gear changes, and keeps the engine in stable performance throughout the entire speed range. [www.legendaryamahaenduros.com](http://www.legendaryamahaenduros.com) The gear ratio spacing is equal through all 5 gears and spaced for scrambles with 5th gear for that long road or straightaway.

#### 4) **Ideal Primary-coupled Kickstarter**

To start the engine, there's no need to shift gears back to "Neutral" Just disengage the clutch and kick the starter crank. This is a great advantage for all types of riding.

#### 5) **Comfort, Riding Position and Running Stability**

The frame is strong but light in weight and the other components are specially designed for off-the-road riding. The superb riding position provides excellent handling and stability for all riders and conditions.

#### 6) **Competition designed Front Forks and Rear Shocks**

The 250 DTI employs telescopic front forks of a spring-actuated-oil dampening type, such as used in most of the presentday racing machines. Handling on bad roads and rough terrain is superior with competition designed damping action. The three-way adjustable rear shock units meet the owners complete passenger and load requirements.

#### 7) **Easy-to-read Individual Speedometer and Tachometer**

To enable the rider to get the most effective use of the engine power range, the single unit tachometer is mounted over the head light and next to speedometer that incorporates two odometers, one with a

trip indicator to reset the milage. This new design offers easy reading, functional purpose and attractive appearance.

#### **8) Trials Universal Tires for Off-The-Road Riding**

Trials Universal tires are provided as standard equipment. Trailriding, scrambling and on-the-road riding are no challenge for traction with these world renowned tires.

#### **9) Ease of conversion for competition**

If the owner wants to convert his DTI to a race ready competition machine GYT engine parts are easily available from your dealer. Conversion is easily made by the use of these readymade bolt-on GYT parts.

#### **10) Right side and Left side shift and brake**

To allow the mounting of optional parts the change pedal can be installed on the right side instead of the left side, The brake pedal can be changed from right side to left side.

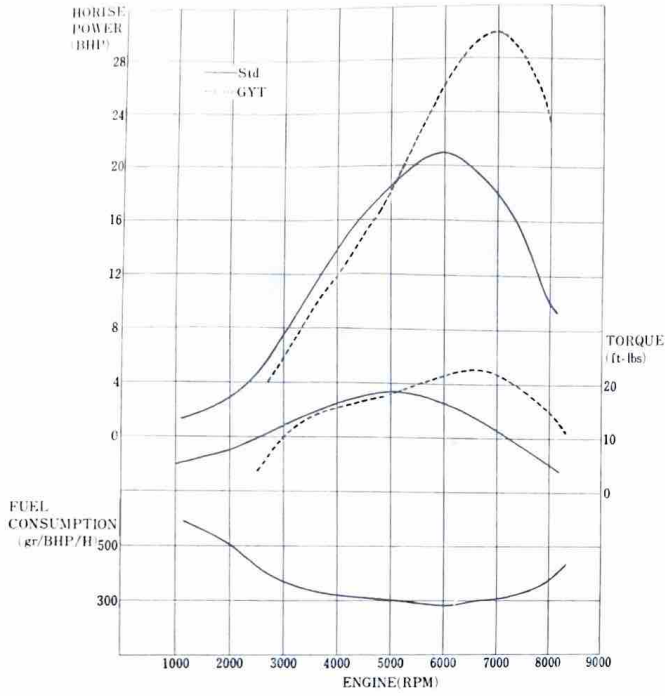
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## § 1. Performance &amp; Specifications

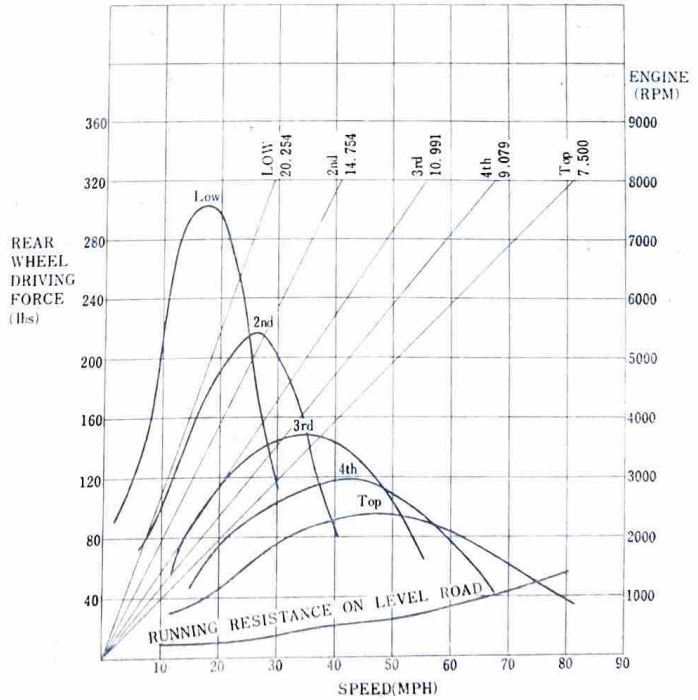
Model:	YAMAHA 250 DTI
<b>Dimensions:</b>	
Overall length	81.1 in
Overall width	35.0 in
Overall height	44.5 in
Wheelbase	53.5 in
Minimum ground clearance	9.6 in
<b>Weight:</b>	Std 232 lbs. GYT 215 lbs
<b>Performance:</b>	
Maximum speed	Over 70 mph (Std. )
Fuel consumption (on paved level road)	94 m/g at 25 m/h
Climbing ability	35° (Std. )
Minimum turning radius	82.6 in
Braking distance	41 ft. at 31 mph
<b>Engine type:</b>	2-stroke, gasoline
<b>Lubrication system:</b>	Separate lubrication (YAMAHA Autolube) GYT. Premix
<b>No. of cylinder:</b>	1 cylinder
<b>Displacement:</b>	15 cu. in (246cc)
<b>Bore and stroke:</b>	2.75 × 2.52 in (70 × 64mm)
<b>Compression ratio:</b>	6.8 : 1
<b>Maximum output:</b>	21.0 BHP/6,000 r. p. m, GYT. 30.0 BHP/7,000 r. p. m
<b>Maximum torque:</b>	16.8 ft-lbs/5,000 r. p. m
<b>Starting method:</b>	Primary kick starter
<b>Ignition system:</b>	Magneto ignition with secondary coil
<b>Transmission:</b>	
Clutch	Wet multi-disc type
Primary reduction method	Gear
Primary reduction ratio	65/21 = 3.095
<b>Gear box:</b>	Constant mesh, 5-speed forward
1st	29/18 = 2.231
2nd	26/16 = 1.642
3rd	23/19 = 1.211
4th	21/21 = 1.000
5th	19/23 = 0.826

Secondary reduction method	Chain DK-520T
Secondary reduction ratio	44/15=2.933
Chassis:	
Frame	Double cradle type
Suspension (front)	Telescopic
Suspension (rear)	Swing arm
Shock absorber (front)	Coil spring double oil dampering
Shock absorber (rear)	Coil spring oil damper
Steering:	
Steering angle	49°
Caster	60.5°
Trail	5.1 in
Braking:	
Brake type	Internal expansion
Braking method (front)	Right hand-operated
Braking method (rear)	Right foot-operated
Tire size:	
Front	3.25-19 4PR
Rear	4.00-18 4PR
Fuel tank capacity:	2.5 gal
Oil tank capacity	1.7 qt
Generator:	
Model	FZA-IAL
Maker	Mitsubishi Electric Co.
Rectifier	Silicon rectifier
Spark plug	NGK B-7E
Battery:	
Model	MVI-6C
Waker	Nippon Denchi
Capacity	6V, 2AH
Lights:	
Headlight	6V 35/35W
Tail/stop light	6V 5.3/17W
Meter light	6V 3W×2
High beam indicator	6V 1.5W

## § 2. ENGINE PERFORMANCE CURVE



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### § 3. SERVICE DATA

- 1) **Piston clearance** 0.040 - 0.045 mm
- 2) **Crank shaft assembly**

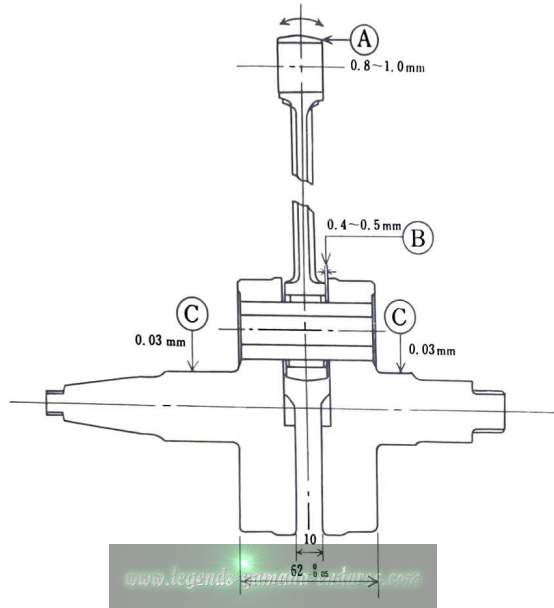


Fig. 1-1

- A. If axial play is 2 mm or more, replace worn parts.
- B. If measured 0.6 mm or more, replace worn parts.
- C. Run out measurements should be within 0.03 mm.

When installing the crankshaft, be sure to use a special spacer.

(The reason: The crankshaft and oil seal have a larger diameter than the crankshaft installing tool body.)

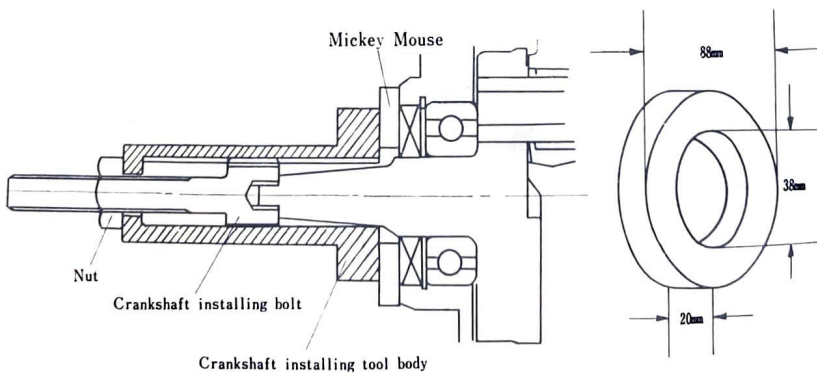


Fig. 1-2

### 3) Clutch assembly

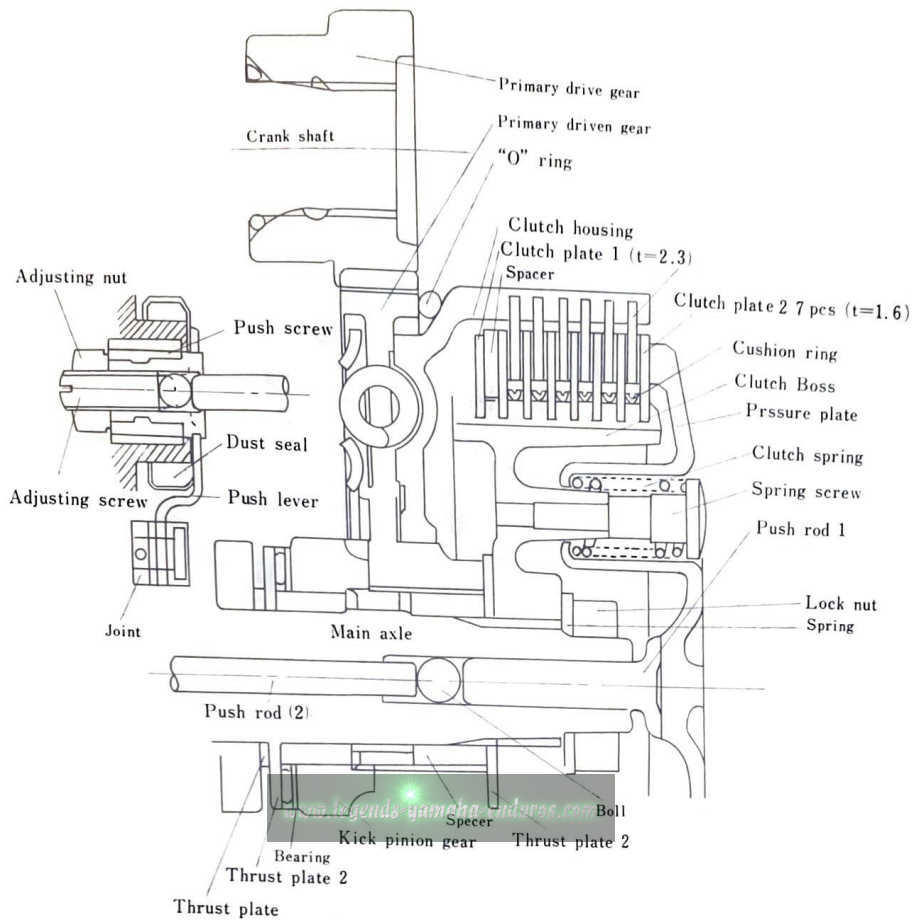


Fig. 2-1

#### Caution on Assembling:

The thrust plates, bearing and spacer should be installed correctly as shown in the sketch to the left. Failure to do this may result in the incorrect assembly as shown in the sketch to the right.

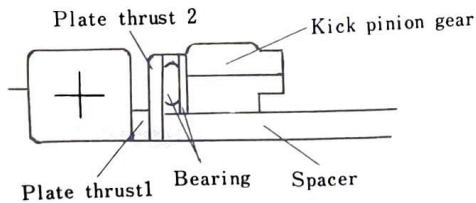


Fig. 2-2

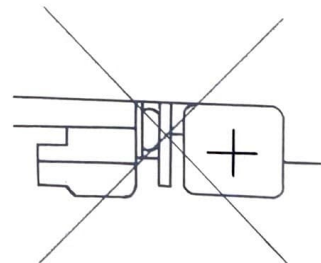


Fig. 2-3

#### 4) Transmission assembly

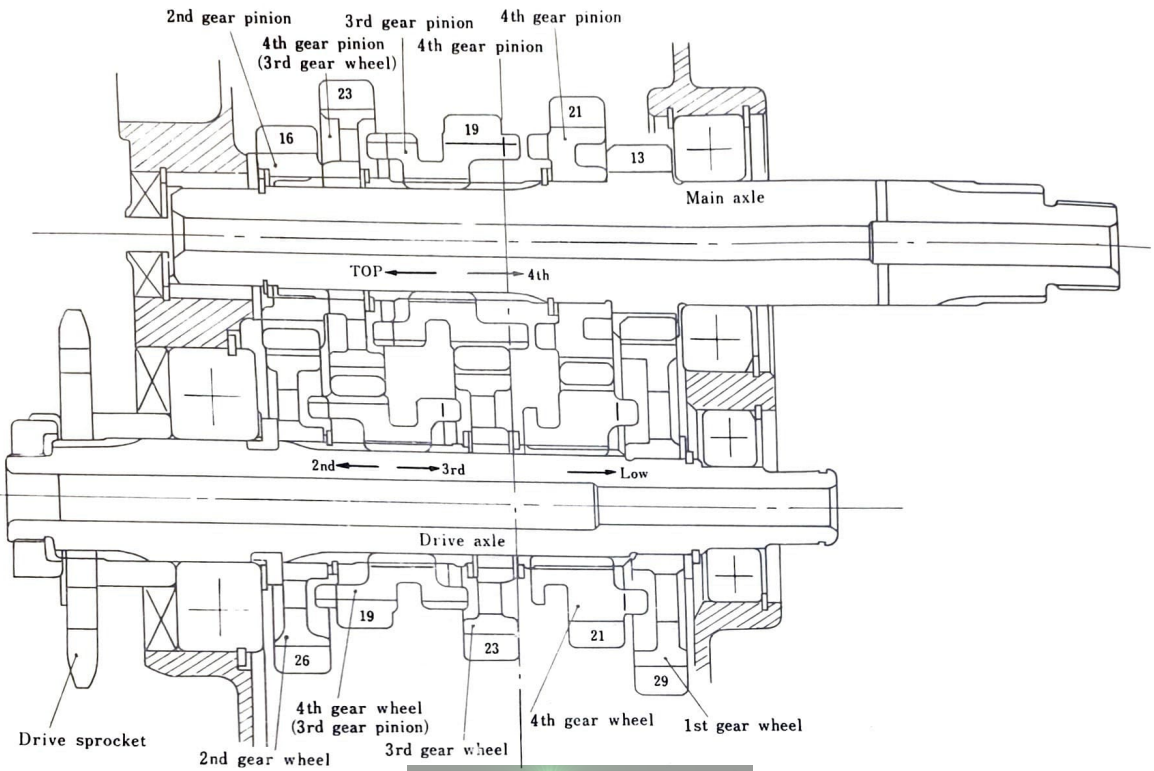


Fig. 3-1  
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	Primary reduction	Transmission gear reduction	Secondary reduction	Total reduction ratio
Low	65/21	$\times 29/13 = 2,231$	$\times 44/15 = 20,254$	: 1
2nd	65/21	$\times 26/16 = 1,624$	$\times 44/15 = 14,754$	: 1
3rd	65/21	$\times 23/19 = 1,211$	$\times 44/15 = 10,991$	: 1
4th	65/21	$\times 21/21 = 1,000$	$\times 44/15 = 9,079$	: 1
Top	65/21	$\times 19/23 = 0,826$	$\times 44/15 = 7,500$	: 1

5) Shifter assembly

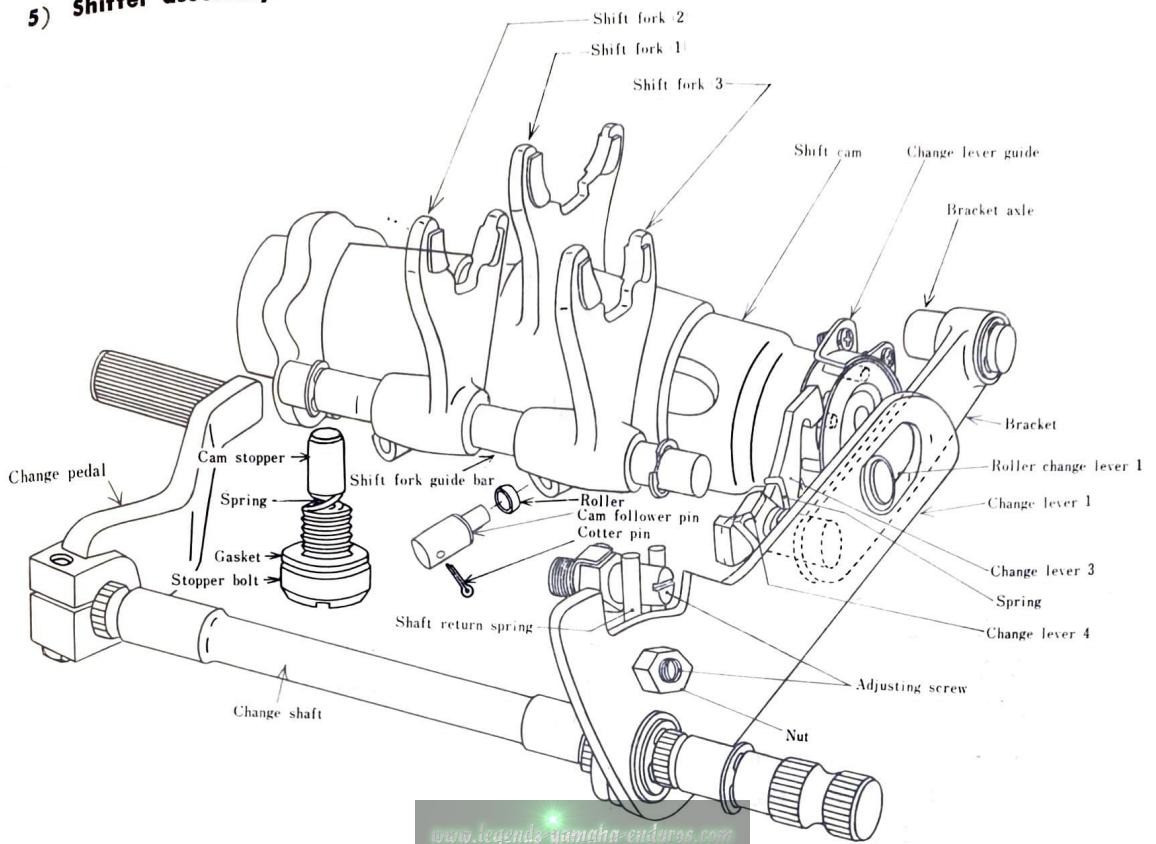


Fig. 4-1

6) Kick starter assembly

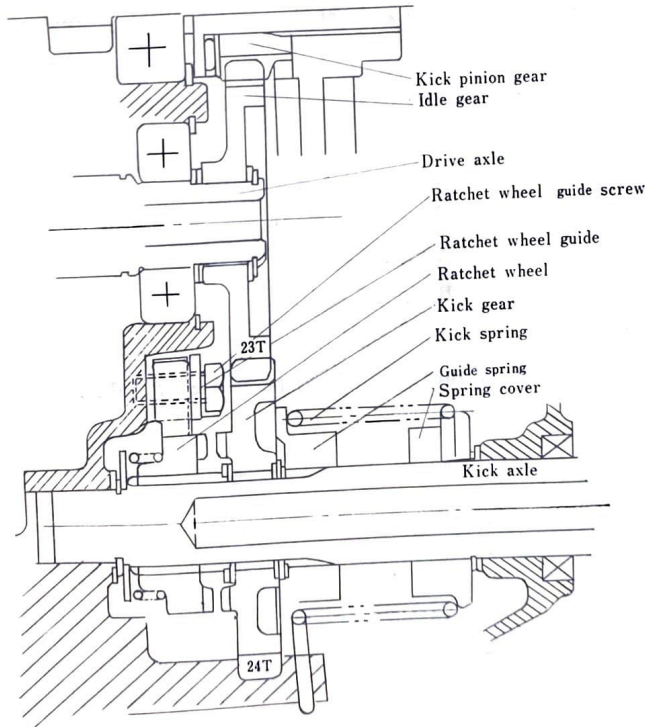
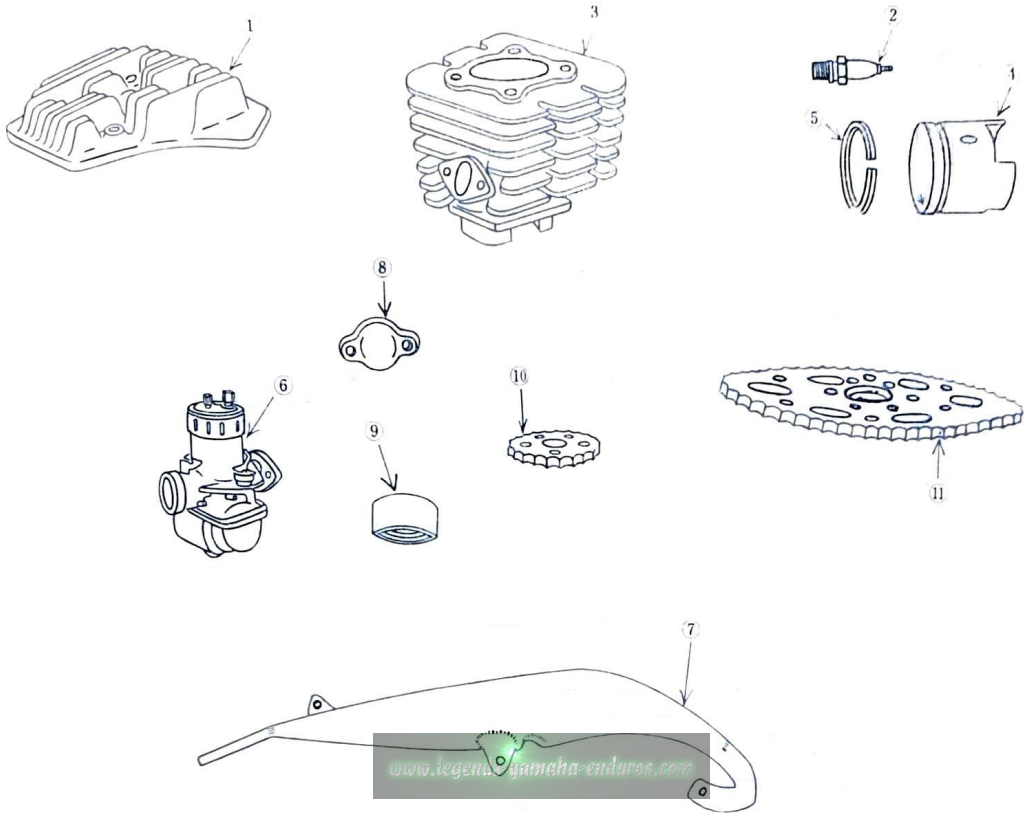


Fig. 5-1



## 4. Genuine Yamaha Tuning Parts



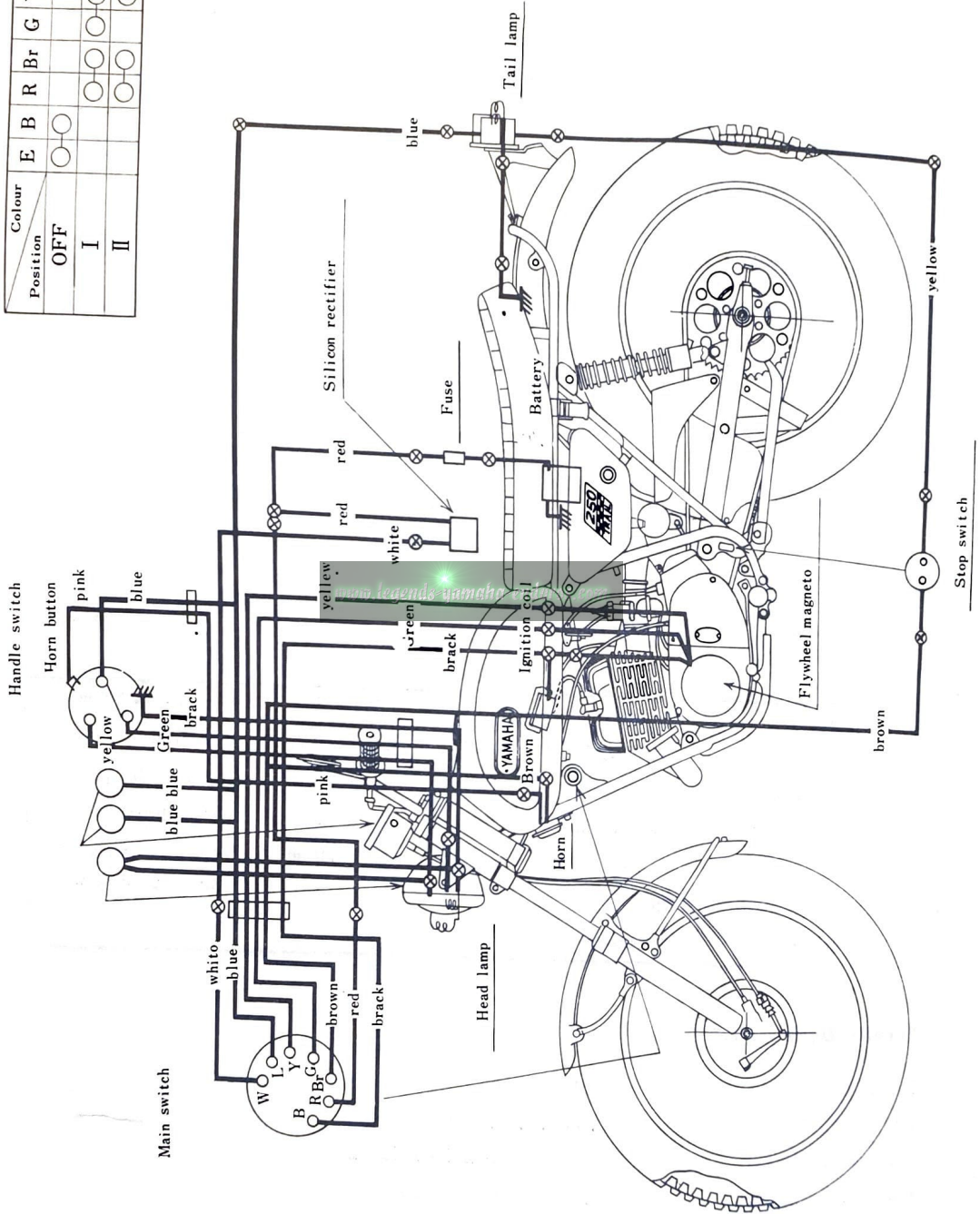
No.	Parts No.	Part Name	No.	Parts No.	Parts Name
1	214-11111-70	Head, cylinder	7	214-14610-70	Muffler
2	94700-00016	Plug, spark	8	161-15426-00	Cover, Oil pump
3	214-11311-70	Body, cylinder	9	214-17819-10	Cap. housing
4	214-11631-70	Piston	10	214-17461-40	Sprocket drive (14T)
5	214-11611-70	Ring, Piston	11	214-25446-10	Gear sprocket wheel (46T)
6	214-14101-70	Carburetor		214-25448-10	" (48T)

### 1) Service Data (G.Y.T.)

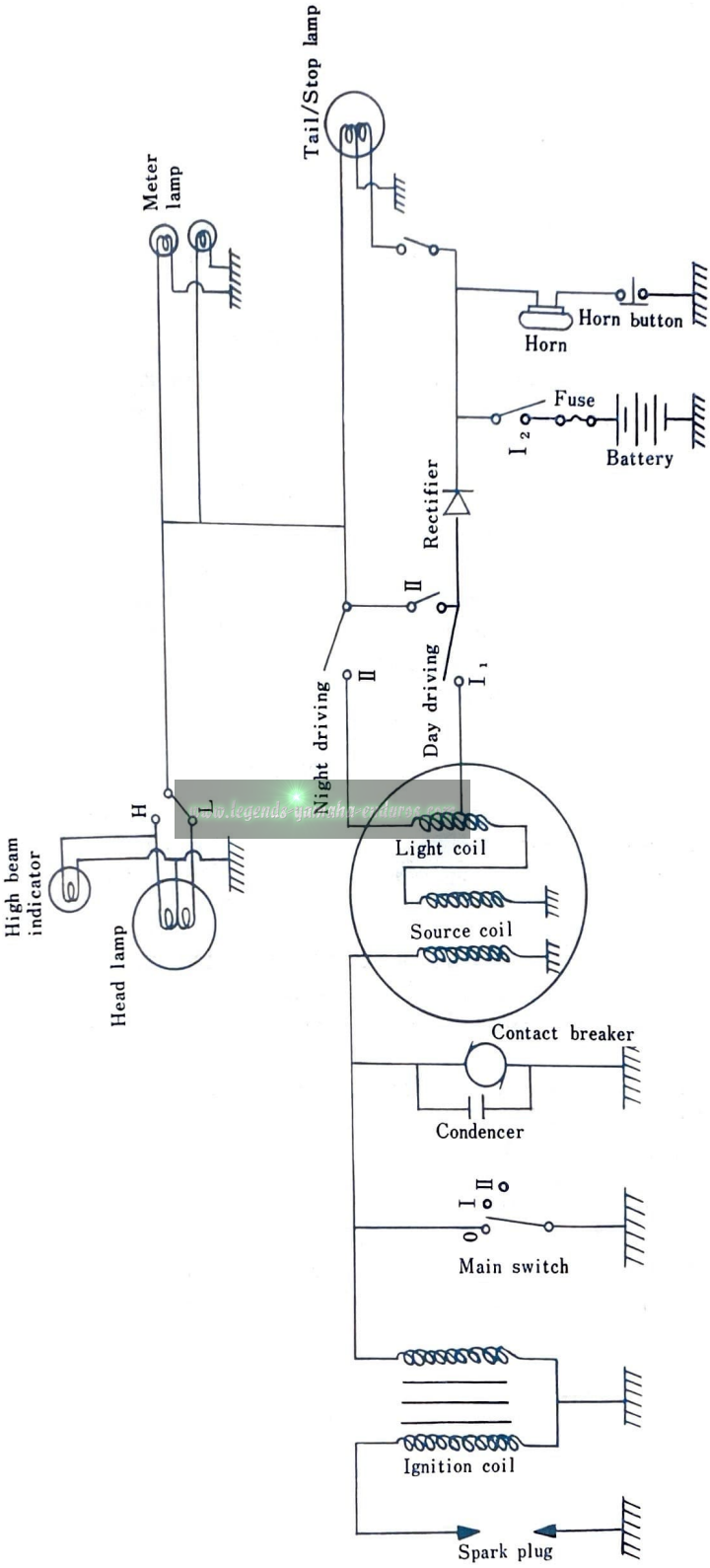
Piston clearance	0.040-0.45 mm
Ignition timing	B. T. D. C. 2.3 mm
Spark plug	Selection (B-8E(N), B-9E(N), B-10E(N))
Carburetor (VM30SH)	M. J #210      P. J #80
	N. J 0-4      G. S #60
	J. N 5D5-3      A. S 1/2 turns
	C. A 3.5
Secondary reduction	Selection (44T, 46T, 48T/14T, 15T,)
Mixing ratio	Gasoline:Oil=15:1 (With out oil pump)
	Gasoline:Oil=35:1 (With oil pump)

# 5. Circuit Diagram

Colour	E	B	R	Br	G	W	Y	L
Position								
OFF	○							
I		○					○	○
II			○				○	○



	0	I <sub>1</sub>	I <sub>2</sub>	II
OFF	○	×	×	×
I	×	○	○	○
II	×	×	○	○



## § 6. Conversion Table

### LENGTHS

Multiply	By	To Obtain
Millimeters (mm)	0.03937	Inches
Inches (in.)	25.4	Millimeters
Centimeters (cm.)	.3937	Inches
Inches (in.)	2.54	Centimeters

Multiply	By	To Obtain
Kilometers (km.)	.6214	Miles
Miles (mi.)	1.609	Kilometers
Meters (m.)	3.281	Feet
Feet (ft.)	.3048	Meters

### WEIGHTS

Kilograms (kg.)	2.205	Pounds
Pounds (lbs.)	.4536	Kilograms

Grams (g.)	.03527	Ounces
Ounces (oz.)	28.35	Grams

### VOLUMES

Cubic centimeters (cc.)	.061	Cubic inches
Cubic inches (cu. in.)	16.387	cc.
Liters (l.)	.264	Gallons
Gallons (gal.)	3.785	Liters
U.S. gallons	1.2	Imperial gals.
Imperial gallons	4.537	Liters

Imperial gallons	277.274	cu. in.
Liters (l.)	1.057	Quarts
Quarts (qt.)	.946	Liters
Cubic centimeters (cc.)	.0339	Fluid ounces
Fluid ounces (fl. oz.)	29.57	cc.

### OTHERS

Metric horsepower (ps.)	1.014	bhp.	Foot-pounds (ft-lbs)	.1383	kg-m
Brake horsepower (bhp.)	.9859	ps.	Kilometers per liter (km/l)	2.352	mpg
Kilogram-meter (kg-m)	7.235	Foot-pounds	Miles per gallon (mpg)	.4252	km/l

### GAS (FUEL) TO OIL RATIO CHART

Gas/Oil Ratio	12:1	16:1	20:1	24:1	28:1	32:1	36:1	40:1
Oil (qt.) per 1 Gal. Gas	0.33	0.25	0.2	0.17	0.14	0.13	0.11	0.1
Oil (oz.) per 1 Gal. Gas	10.7	8.0	6.4	5.3	4.6	4.0	3.6	3.2
Oil (qt.) per 5 Gal. Gas	1.66	1.25	1.0	0.84	0.72	0.63	0.55	0.5
Oil (oz.) per 5 Gal. Gas	53.5	40.0	32.0	26.6	22.8	20.0	17.8	16.0

(U.S. Gallons)

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