YAMAHA

DT125G / DT175G

Supplementary

Service Manual

LIT-11616-01-69

3J0-28197-10

Particularly important information is distinguished in this manual by the following notations:

NOTE: A NOTE provides key information to make procedures easier or clearer.

CAUTION: A CAUTION indicates special procedures that must be followed to avoid damage to the motorcycle.

WARNING: A WARNING indicates special procedures that must be followed to avoid injury to a motorcycle operator or person inspecting or repairing the motorcycle.

DT125G/175G
Supplementary Service Manual

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P/N LIT-11616-01-69

FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and new data for the DT125G/DT175G.
For complete information on service procedures, it is necessary to use this Supplementary Service Manual together with Service Manual for the DT125E/DT175E (2A6-28197-10).

NOTE:
This Supplementary Service Manual contains special information regarding periodic maintenance to the emissions control system for the DT125G/DT175G. Please read this material carefully.

SERVICE DEPT.
INTERNATIONAL DIVISION
YAMAHA MOTOR CO., LTD.

NOTICE

This manual was written by the Yamaha Motor Company primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to put an entire mechanic's education into one manual, so it is assumed that persons using this book to perform maintenance and repairs on Yamaha motorcycles have a basic understanding of the mechanical precepts and procedures inherent to motorcycle repair technology. Without such knowledge, attempted repairs or service to this model may render it unfit for use and/or unsafe.

This model has been designed and manufactured to perform within certain specifications in regard to performance and emissions. Proper service with the correct tools is necessary to ensure that the machine will operate as designed. If there is any question about a service procedure, it is imperative that you contact a Yamaha dealer before continuing. Before attempting any service, check with your Yamaha dealer for any service information changes that apply to this model. This policy is intended to provide the customer with the most satisfaction from his machine and to conform with federal environmental quality objectives.

Yamaha Motor Company Ltd. is continually striving to further improve all models manufactured by Yamaha. Modifications and significant changes in specifications or procedures will be forwarded to all Authorized Yamaha dealers and will, where applicable, appear in future editions of this manual.

NEW SERVICE

A. MAINTENANCE AND LUBRICATION CHART

1. Periodic Maintenance Emission Control System

NO.	ITEM	REMARKS	INITIAL BREAK-IN		THEREAFTER EVERY
			1,000 km or 1 month (600 mi)	4,000 km or 7 months (2,500 mi)	3,000 km or 6 months (2,000 mi)
1.	Spark Plug	Check spark plug condition and plug gap. Replace plug every 3,000 km (2,000 mi).		Replace	Replace
2.	Fuel Hose	Check fuel for cracks and damage. Replace if necessary.		○	○
3.	Fuel Petcock	Check fuel filter screen. Clean it, if necessary.	○	○	○
4.	Exhaust System	Check for leakage. Retighten, if necessary. Replace gasket(s), if necessary.		○	○
5.	Idle Speed	Check and adjust engine idle speed.		○	○

2. General Maintenance/Lubrication

NO.	ITEM	REMARKS	TYPE	INITIAL BREAK-IN		THEREAFTER EVERY	
				1,000 km or 1 month (600 mi)	4,000 km or 7 months (2,500 mi)	3,000 km or 6 months (2,000 mi)	15,000 km or 24 months (9,500 mi)
1.	Transmission Oil	Warm-up engine before draining.	Yamalube 4-cycle oil or SAE 10W/30 "SE" motor oil or "GL" gear oil	Replace	Replace	Replace	
2.	Autolube Pump	Check and adjust minimum pump stroke.	—	○	○	○	
3.	Air Filter	Check for clogging. If necessary clean and dampen with oil.	—	○	○	○	
4.	Control and Meter Cables	Inspect and lubricate thoroughly.	Yamaha chain and cable lube or SAE 10W/30 Motor oil	○	○	○	
5.	Clutch	Adjust free play.	—	○	○	○	
6.	Brake System	Inspect and adjust. Replace shoes, if necessary.	—	○	○	○	
7.	Throttle	Adjust as necessary. Lightly lubricate.	Lithium base grease		○	○	

General Maintenance/Lubrication (cont.)

NO.	ITEM	REMARKS	TYPE	INITIAL BREAK-IN		THEREAFTER EVERY	
				1,000 km or 1 month (600 mi)	4,000 km or 7 months (2,500 mi)	3,000 km or 6 months (2,000 mi)	15,000 km or 24 months (9,500 mi)
8.	Brake/Clutch Pivot Shaft	Lubricate. Apply lightly.	Yamaha chain and cable lube or SAE 10W/30 motor oil		○	○	
9.	Drive Chain	Check chain condition. Adjust chain tension. Lubricate chain thoroughly.	Yamaha chain and cable lube or SAE 10W30 motor oil	Every 500 km (300 mi)			
10.	Side Stand Pivot Shaft	Lubricate. Apply lightly.	Yamaha chain and cable lube or SAE 10W/30 motor oil		○	○	
11.	Front Fork Oil	Drain completely. Fill to specification.	Yamaha fork oil 10 wt or equivalent				Replace
12.	Steering Bearings	Check steering assembly for looseness. Moderately repack every 15,000 km (9,500 mi).	Medium weight wheel bearing grease		○		Repack
13.	Wheel Bearings	Check bearings for smooth rotation. Moderately repack every 15,000 km (9,500 mi).	Medium weight wheel bearing grease		○		Repack
14.	Battery	Check specific gravity and breather pipe for proper function.	–		○	○	

3. ANTICIPATED MAINTENANCE

The maintenance items in this table are set apart from the regular periodic maintenance items because of their anticipated need of irregular service intervals. The service interval is dependent upon variable factors such as the severity of use, operating conditions, etc. Therefore, perform this maintenance when the described symptoms warrant it.

NO.	ITEM	REMARKS
1.	Spark Plug	If any spark plug failure is noticed replace the spark plug. Symptoms indicating spark plug failure are anticipated to occur around 3,000 km (2,000 mi).
2.	Decarbonization	If heavy power loss is evident, decarbonize the cylinder head, piston head, and exhaust system. Carbon build-up is anticipated to occur around 5,000 ~ 10,000 km (3,000 ~ 6,000 mi).
3.	Piston	If the piston rattles, the vehicle becomes hard to start, appears to be lacking power, or becomes in-operative, repair as follows: replace the piston and piston rings, clean, hone, or replace the cylinder. These symptoms are anticipated to occur mainly below 500 km (300 mi).

1. Spark plug
   a. Symptoms — If the spark plug becomes wet with fuel or oil, or receives an accumulation of carbon, the spark plug will become electrically shorted and ineffective. As a result, engine misfiring may occur, possibly the engine may suddenly stop, and restarting will be impossible. These symptoms are anticipated to occur at about 3,000 km.
   b. Maintenance criterion — If above mentioned symptoms are noticed, remove the spark plug and inspect the electrode for carbon bridging and/or oily electrode condition.
   c. Maintenance — After inspection, replace plug if necessary.
2. Decarbonization
   a. Symptoms — If a vehicle is driven habitually at low speed, the engine runs cold and thus carbon tends to build up on the cylinder exhaust port, cylinder head, piston head, exhaust passage, in the exhaust pipe, and in the silencer. With sufficient carbon deposits the exhaust passages become clogged and restricts the passage of exhaust gas.
   Eventually the engine will demonstrate poor performance, poor acceleration (20 to 30% down from original), afterburning, or after running.
   Sufficient carbon accumulation to justify decarbonization is anticipated to occur between 5,000 to 10,000 km of operation.
   b. Maintenance criterion — If any of the symptoms above are noticed, following procedures should be used;
      1) Check fuel flow.
      2) Check spark plug for color and carbon build-up. (In the case of heavy carbon build-up, spark plug shows black color and/or the carbon build-up evident.)
   c. Maintenance — After this inspection, if decarbonization is deemed necessary, decarbonize the piston crown, exhaust port, cylinder head and exhaust passage of exhaust system by disassembling these components and carefully scraping the accumulated carbon with a round scraper.
3. Piston
   a. Symptoms — If the engine develops a rattling piston noise, is difficult to start, provides markedly reduced performance (20% or more), and/or causes a sudden engine stoppage, the piston may be worn excessively. This may be the result of a number of conditions of improper carburetion, inadequate or improper lubrication and/or improper ignition timing. Such conditions can result in overheating and piston wear. These symptoms are anticipated to occur below 500 km.
   b. Maintenance criterion — If any of the above mentioned symptoms are noticed, following procedures should be used;
      1) Check fuel flow.
      2) Check for kick cranking resistance. (If the piston is worn, the resistance of the kick crank will be unusually heavy or unusually light.)
      3) Check the spark plug for unusual color or deposit. (If piston is worn, the spark plug may show a bright metalic color or deposit on the spark plug insulator.)
   c. Maintenance — If an inspection reveals damage to the cylinder, bore or replace the cylinder, and replace the piston and piston rings. Make sure proper piston clearance is maintained.

B. GENERAL

Machine identification

The frame serial number is located on the right-hand side of the head pipe assembly. The first three digits identify the model. This is followed by a dash. The remaining digits identify the production number of the unit. The engine serial number is located on a raised boss on the right-hand, rear side of the engine. Engine identification follows the same code as frame identification.

Starting serial number: DT125G: 3J0-000101 DT175G: 3J1-000101

C. ENGINE

Spark plug

1. After a run of initial 1,000 km, check the discoloration of the spark plug and clean it. After that, measure the spark plug gap and adjust it, if does not conform to the specification.

Spark plug gap: 0.6 ~ 0.8 mm (0.024 ~ 0.031 in)

2. Whenever the spark plug is replaced or cleaned, measure the plug gap, and if incorrect, readjust the plug gap.
3. Replace the spark plug when the machine has travelled the specified distance. When replacing the spark plug, always use the proper type.

Replacement limit: Initial 4,000 km (2,500 mi) and thereafter every 3,000 km (2,000 mi)
Standard spark plug: DT125G: B8ES (NGK) DT175G: B9ES (NGK)

4. When installing the spark plug, always clean the gasket surface, wipe off any grime that might be present on the surface of the spark plug, and torque the spark plug properly.

Tightening torque: 2.5 m-kg (18 ft-lb)

Carburetor

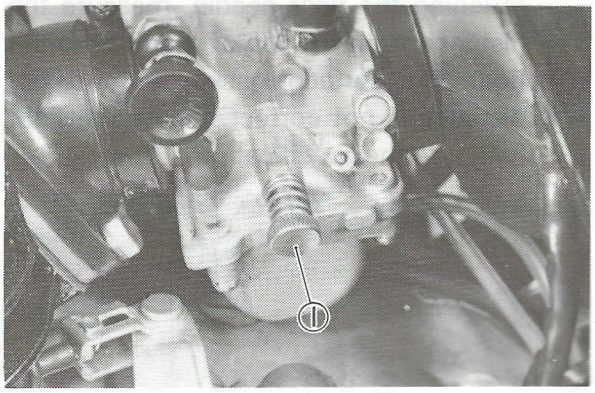
1. Idle speed
   Check and adjust idle speed as follows:
   a. Start the engine and warm it up before setting idle speed.

NOTE:

A warm engine is defined as one which had been operated for about 3 minutes at 3,000 r/min with no load.

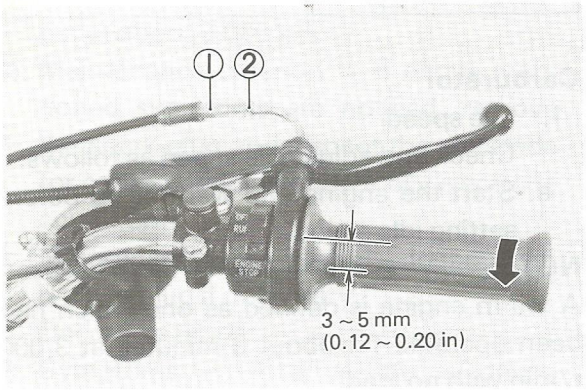
   b. Set the idle speed to specified setting by turning the throttle stop screw in or out with the motorcycle in the upright position.

Idle speed: 1,350 ~ 1,500 r/min



1. Throttle stop screw

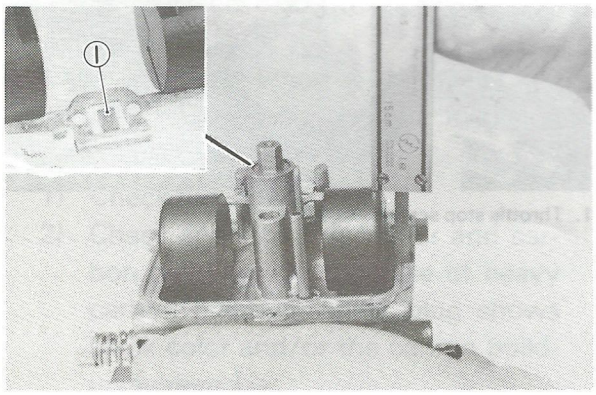
2. Throttle cable
Check play in turning direction of throttle grip. The free play should be 3 ~ 5 mm (0.12 ~ 0.20 in) at grip flange. Loosen the lock nut and turn the wire adjuster to make the necessary adjustment. Be sure to tighten the lock nut properly.



1. Adjuster 2. Lock nut

If the adjustment of play with throttle wire 1 is impossible, replace the oil pump wire, and throttle wires 1 and 2 as a set.

3. Checking the float height
Hold the carburetor in an upside down position. Hold the floats with tang just touching the float needle, measure the distance from the top of the float to the float bowl surface (gasket removed). If distance is not correct, adjust the float height to the specification.



1. Tang

Float height:
21.0 mm ± 0.5 mm (0.83 in ± 0.02 in)

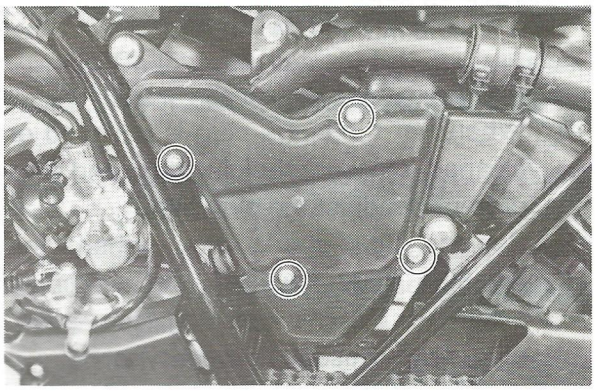
To correct the float height, remove the float assembly and slightly bend the tang as required. BOTH FLOATS MUST BE THE SAME HEIGHT.

4. Carburetor specification
Carburetor specifications are changed as follows.

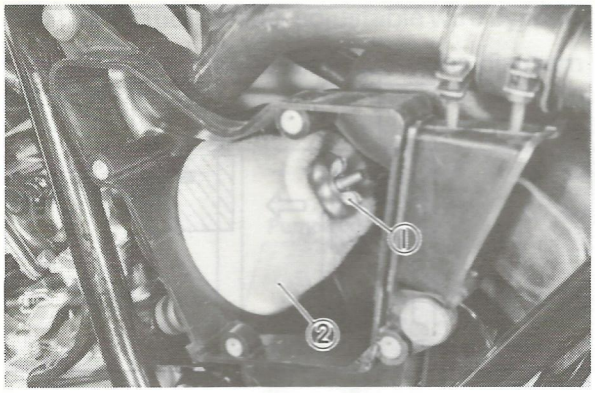
	DT125G	DT175G
Type & Manufacture	VM22SS/Mikuni	VM24SS/Mikuni
I.D. Mark	3J000	3J100
Main jet	#120	#150
Jet Needle ·	5GL11	5GL13
Needle jet	N-8	N-4
Cutaway	#2.5	#2.0
Pilot jet	#20	#22.5
Air screw	Preset	Preset
Starter jet	#20	#20
Float height	21 mm ± 0.5 mm	21 mm ± 0.5 mm
Engine idling speed	1,350 ~ 1,500 r/min	1,350 ~ 1,500 r/min

Air filter cleaning

1. Removal
a. Remove the side cover, and remove the air filter case cap by removing the panhead screws (4).

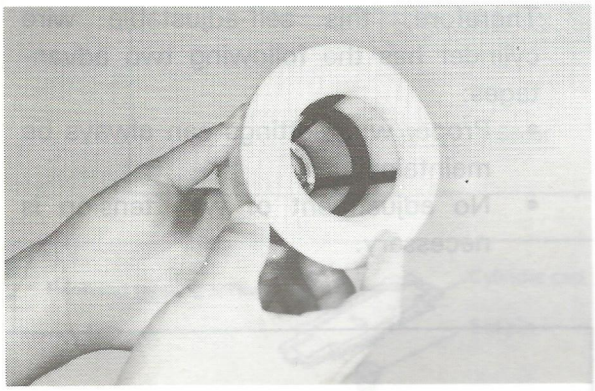


b. Remove the wing nut and plate washer. And pull out the element from its case, remove the guide from the element.



1. Wing nut 2. Element

2. Cleaning method
   Clean the element with solvent. After cleaning, remove the remaining solvent by squeezing the foam rubber. Then apply 30W motor oil to the entire surface and squeeze out the excess oil. The foam should be wet but not dripping. Coat the sealing edges of the filter element with light grease.



3. Reassemble by reversing the removal procedure. Check that the element is seated completely against the case.
4. The air filter element should be cleaned at the specified intervals.
   (See page 1 "GENERAL MAINTENANCE/LUBRICATION" chart.)

NOTE:

Each time cleaner element maintenance is performed, check the air inlet to the cleaner case for obstructions. Check the air cleaner joint rubber to the carburetor and manifold fittings for an airtight seal. Tighten all fittings thoroughly to avoid the possibility of unfiltered air entering the engine.

Engine and Transmission oil

Recommended oil and quantity are changed as follows.

1. Engine oil (Autolube oil)
   We recommended Yamalube 2-cycle oil. If for any reason you should use another type, use a 2-cycle engine oil labeled "BIA certified for service TCW".
2. Transmission oil

Recommended oil: Yamalube 4-cycle oil or SAE 10W/30 type "SE" motor oil or "GL" gear oil
Oil quantity: Replacement . . . . . 650 cc ± 50 cc (0.7 ± 0.053 US. qt) Overhauling . . . . . 750 cc ± 50 cc (0.8 ± 0.053 US. qt)

Piston clearance

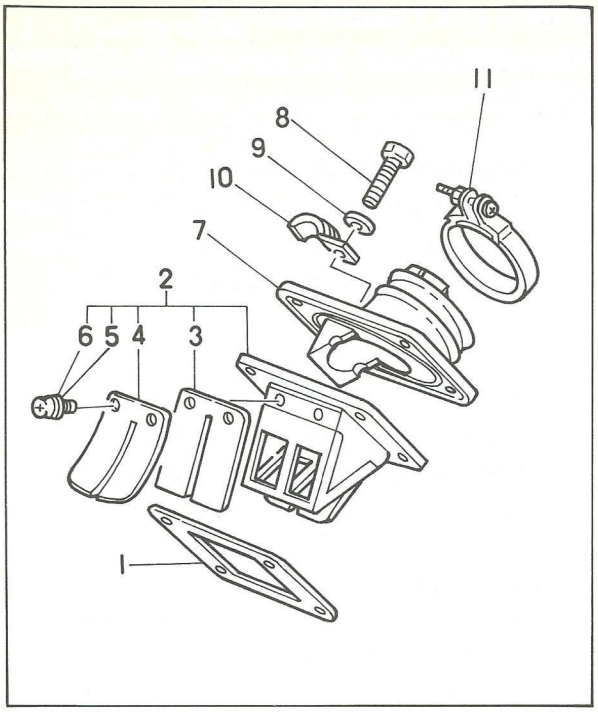
On the DT175G (3J1), the piston clearance has been changed as follows.

Piston clearance: DT175G: 0.040 ~ 0.045 mm (0.0016 ~ 0.0018 in)

Reed valve

Valve stopper clearance is changed as follows.

Valve stopper clearance: 9.0 ± 0.3 mm (0.354 ± 0.0118 in)



1. Valve seat packing
2. Valve reed ass'y
3. Reed valve
4. Reed valve stopper
5. Spring washer
6. Panhead screw
7. Carburetor joint
8. Bolt
9. Plate washer
10. Clamp
11. Hose clamp

D. CHASSIS

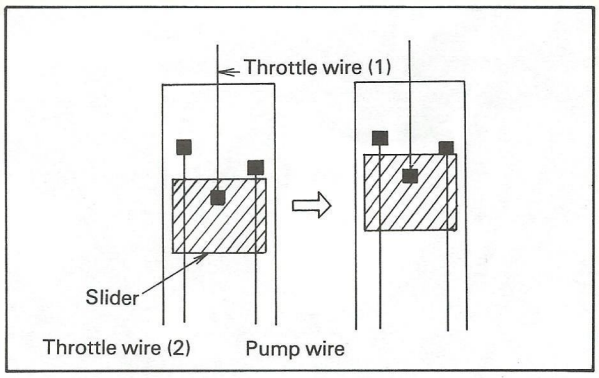
Self-adjustable wire cylinder (Newly added)

Both throttle wire (2) and oil pump wire will stretch as the distance travelled increases. If both wires stretch evenly, there is no problem, but throttle wire tends to stretch more. Accordingly, the oil pump wire will be pulled before the throttle wire, and thus oil consumption tends to increase. (If these wires are checked and adjusted periodically, this problem will be solved.)

To solve this problem, a self-adjustable wire cylinder is employed.

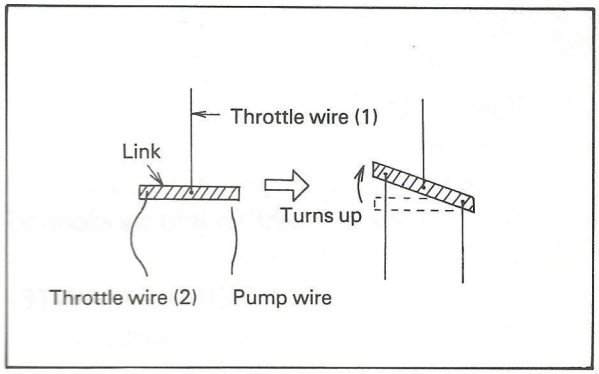
Principle of wire cylinder operation

1. Conventional wire cylinder
   a. Turning the throttle grip pulls the throttle wire (1) upward.
   b. The slider is pulled up at the same time, and as a result, the oil pump wire which is tighter than the throttle wire (1) is pulled up first.
      - Since the pump wire is pulled first, oil consumption will be increased.



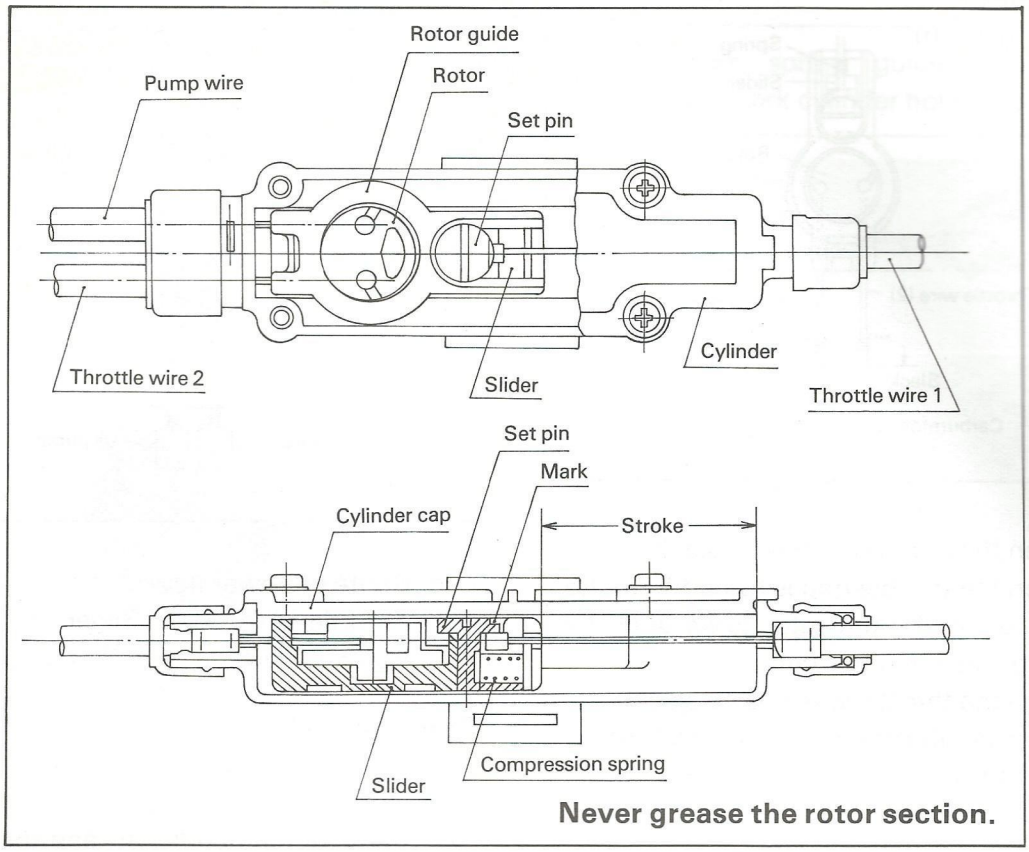
2. Self-adjustable wire cylinder
   a. Turning the throttle grip pulls the throttle wire (1) upward.
   b. Since the throttle wire (2) has slack the link is turned up at one side.
   c. After the link is turned up, the throttle wire (2) becomes tight and the link stops its movement.
   d. After the link stops, both throttle wire (2) and pump wire are pulled up.

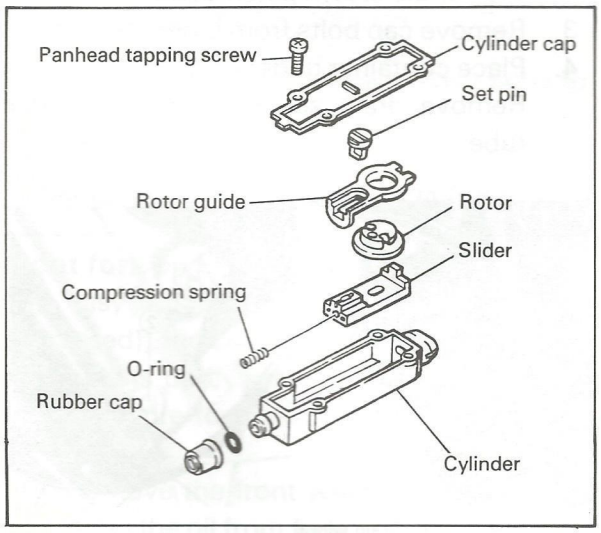
   Therefore, this self-adjustable wire cylinder has the following two advantages:
   - Proper wire settings can always be maintained.
   - No adjustment of wire tension is necessary.



3. Operation of self-adjustable wire cylinder

a. New wire cylinder construction diagram





b. Functions of parts

Set pin:

It prevents the wire end (throttle wire 1) from coming loose and keeps the rotor guide in place.

(When the set pin is turned 1/2 turn to the rotor side, it can be removed.) When it is installed, be sure to bring the match mark to the original position.

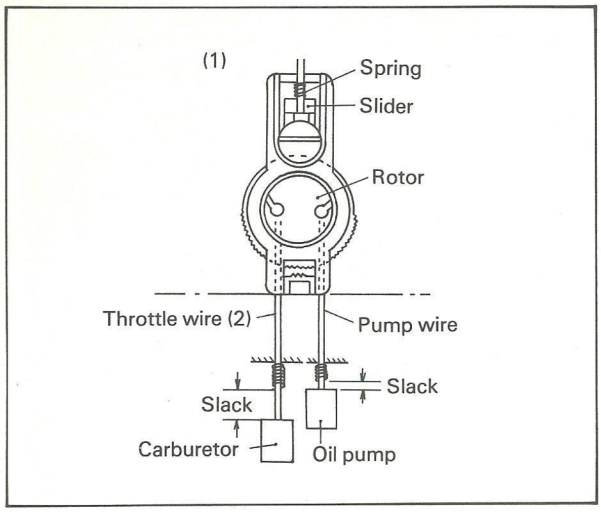
Rotor:

When the throttle grip is twisted from the closed position, the rotor is turned so that slack in the pump wire and throttle wire (2) are properly adjusted.

Rotor guide:

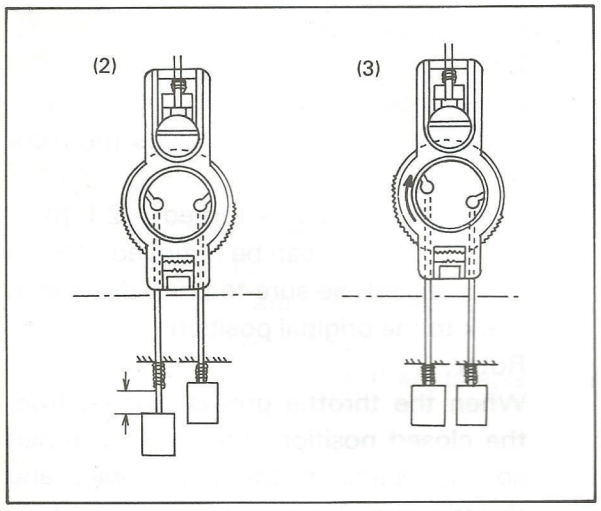
It serves as the guide for the rotor when it turns.

(1) State of the wire cylinder before the throttle grip is turned.



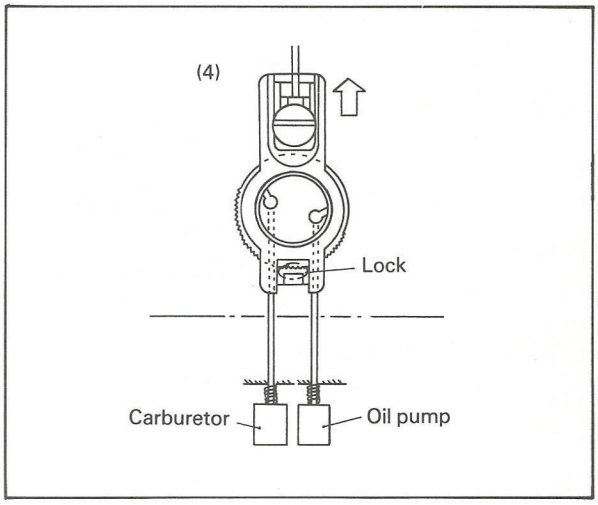
(2) When the pump wire has no slack.
When the throttle grip is turned from the position in (1), the rotor turns until the pump wire becomes tight.

(3) When the throttle wire has no slack.
When the throttle grip is turned further, the rotor turns until the throttle wire (2) becomes tight.



(4) Start the pulling up of pump and throttle wires.
When the rotor is further turned, the wire cylinder spring is contracted, the slide moves in the direction of the arrow, and the slider lock comes in mesh with the rotor, thus locking the rotor.

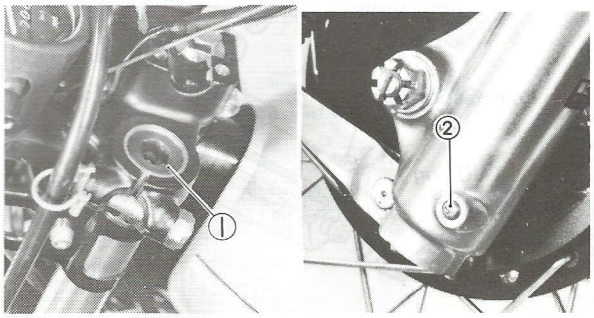
(5) When the rotor is further turned, the slider is pulled up while the rotor is being locked, and as a result, both carburetor and oil pump are actuated.



c. Route of power flow
Throttle wire (1) → Slider → (Lock) → Rotor → Throttle wire (2), pump wire.

Front fork oil change

1. Elevate front wheel by placing a suitable stand under the engine.
2. Remove the handlebar, and then loosen the handle crown pinch bolts.
3. Remove cap bolts from inner fork tubes.
4. Place container under each fork tube.
Remove drain screw from each outer tube.



1. Cap bolt 2. Drain screw

5. After most of oil has drained, slowly raise and lower outer tubes to pump out remaining oil.
6. Replace drain screws.

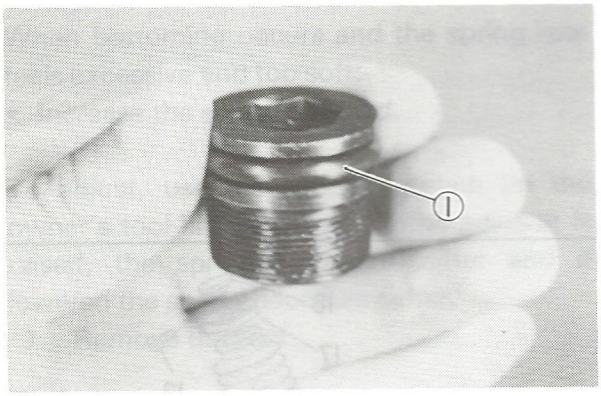
NOTE:
Check gasket, replace if damaged.

7. Measure correct amount of oil and pour into each leg.

Recommended oil:
Yamaha Fork Oil 10Wt or equivalent

Quantity per leg: 183 cc (6.2 oz)

8. After filling, slowly pump the fork tubes up and down to distribute the oil.
9. Inspect O-ring on fork cap bolts and replace if damaged.



1. O-ring

10. Install the fork cap bolts and torque to specification.

Fork cap torque: 2.0 m-kg (14 ft-lb)

11. Tighten the handle crown pinch bolts to specification.

Tightening torque: 3.3 m-kg (24 ft-lb)

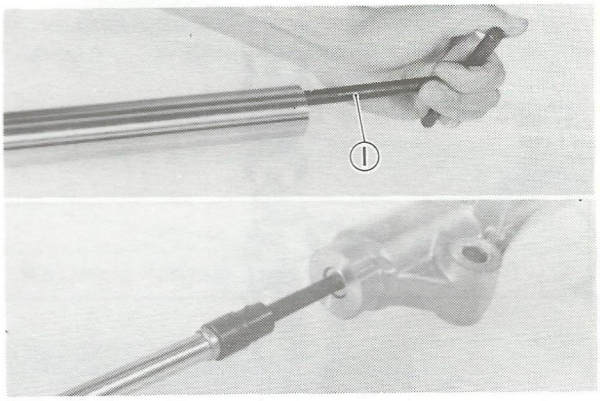
Front fork oil seal change

For easy riding (i.e., the seat height is decreased), the construction of the front fork assembly is partly changed, and as a result, the procedure for disassembly is also changed.

1. Remove the front wheel assembly. And drain the oil from fork.
2. Remove the cap bolt, spacer and fork spring.
3. Loosen the handle crown pinch bolt and under bracket pinch bolts.
   Loosen the headlight stay pinch screw.
4. Slide the front fork (inner and outer tube as an assembly) down and out of the under bracket.
5. Loosen the screw and remove the boot.
6. Remove the bolt from the bottom of the outer tube and pull the inner and outer tubes apart.

NOTE:

Use the fork spring guide wrench for disassembly of fork cylinder holding bolt.

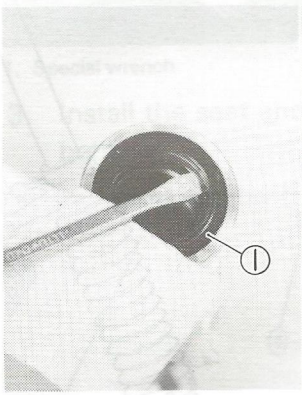


1. Fork spring guide wrench

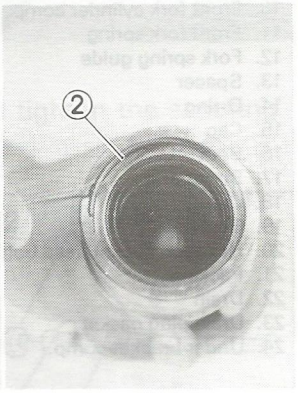
7. Pry out the dust deal, and remove the snap ring and washer.
   Pry out the damaged oil seal.

CAUTION:

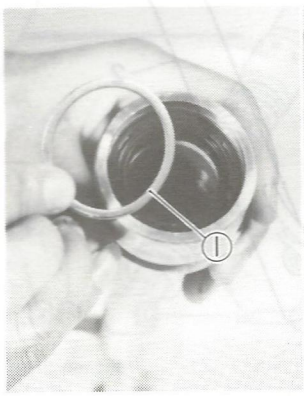
Take care during removal to avoid damaging the outer tube.



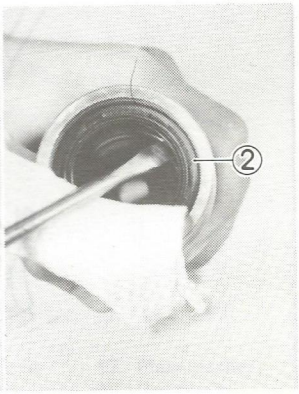
1. Dust seal



2. Snap ring

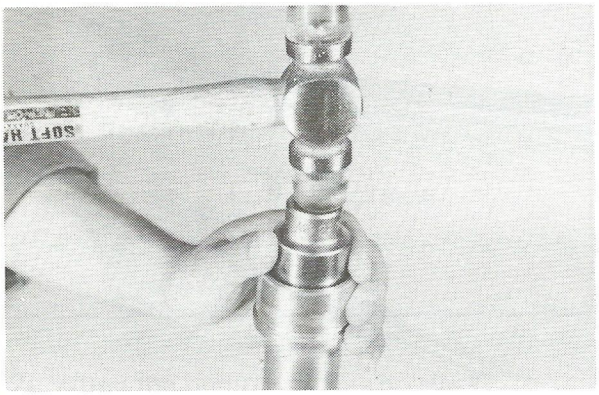


1. Washer



2. Oil seal

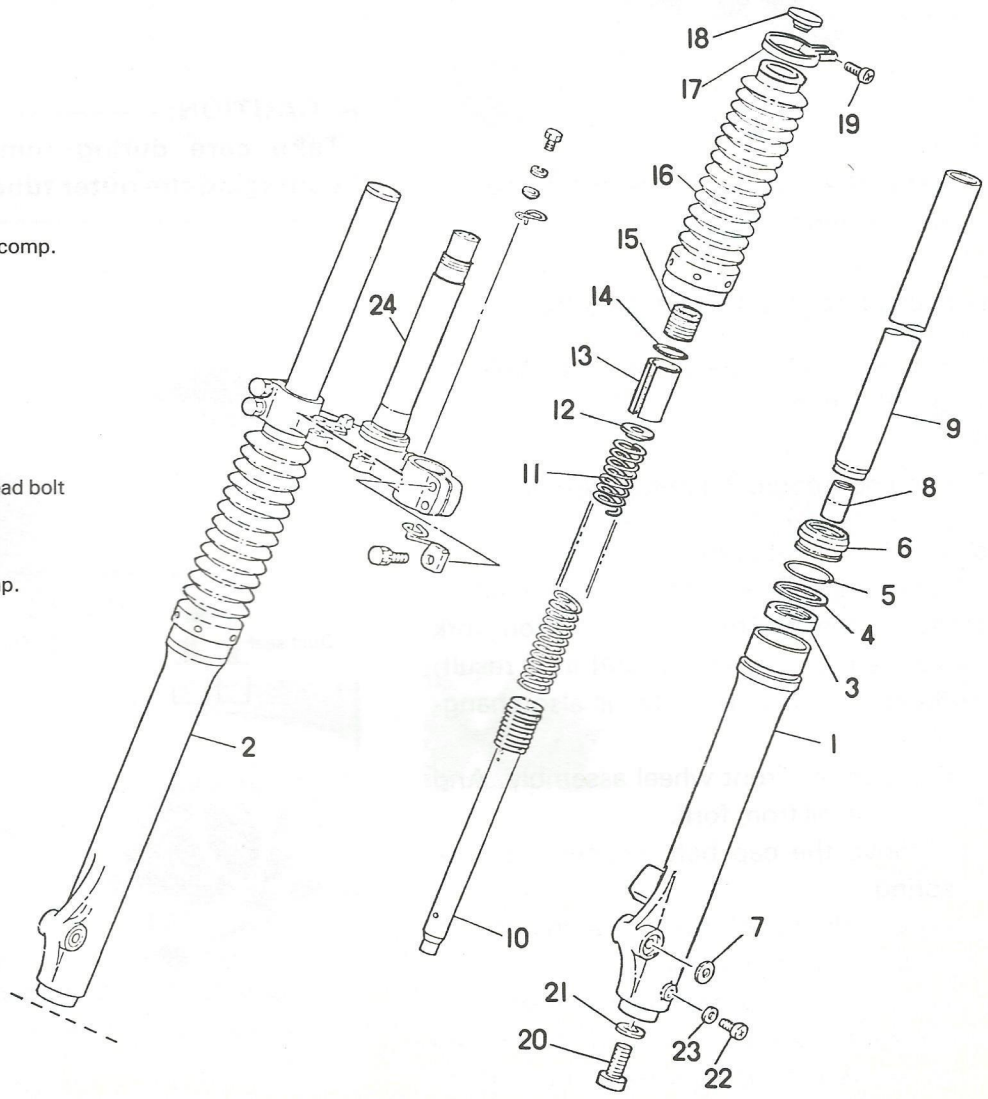
8. When reassembling, reverse the removal procedure taking care of following points:
   a. Make sure all components are clean before reassembly.
   b. Insert new oil seal "open" side down and dust seal (Manufacturer's marks up) using large socket and soft hammer.



   c. Install the front forks so that they are flush with the upper surface of the handle crown.
   d. Tightening torque:

Cylinder holding bolt: Under bracket pinch bolt:
2.3 m-kg (16 ft-lb)

1. Outer left tube
2. Outer right tube
3. Oil seal
4. Washer
5. Snap ring guide
6. Dust seal
7. Washer
8. Spindle
9. Inner tube comp.
10. Front fork cylinder comp.
11. Front fork spring
12. Fork spring guide
13. Spacer
14. O-ring
15. Cap
16. Boot
17. Boot band
18. Cap
19. Screw
20. Hexagon socket head bolt
21. Packing
22. Drain
23. Drain plug gasket
24. Under bracket comp.



Rear shock absorber

For easy riding (i.e., the seat height is decreased), the construction of the rear shock absorber is partly changed, and as a result, the procedure for adjustments are also changed.

The spring pre-load of the rear shock absorber can be adjusted to suit rider preference, weight, ane course conditions.

When the spring rate feels excessive and too hard:

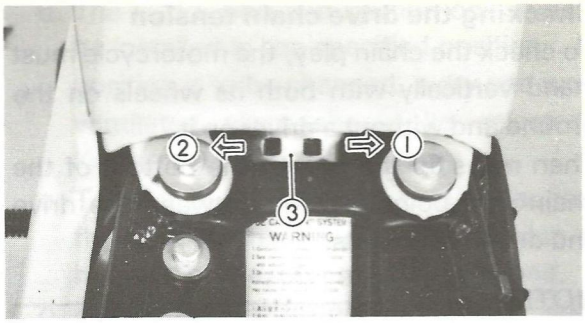
- Decrease the spring pre-load for softer ride.

When bottoming occurs and the spring rate feels excessive and too soft:

- Increase the spring pre-load.

To adjust, use the special wrench (in the owner's tool kit) as shown. If the adjuster is raised, the spring becomes stiffer and if lowered the spring becomes softer.

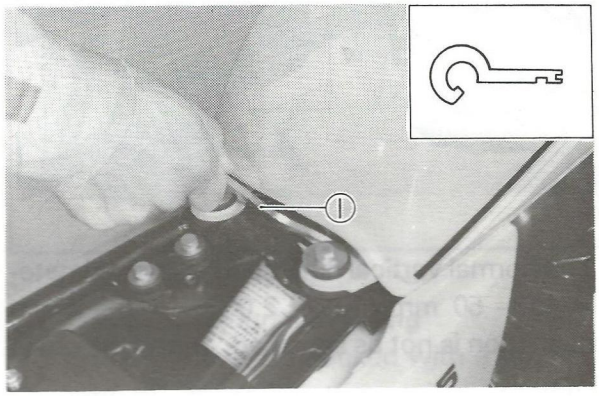
1. Remove the seat.



1. Stiffer 2. Softer 3. Adjuster

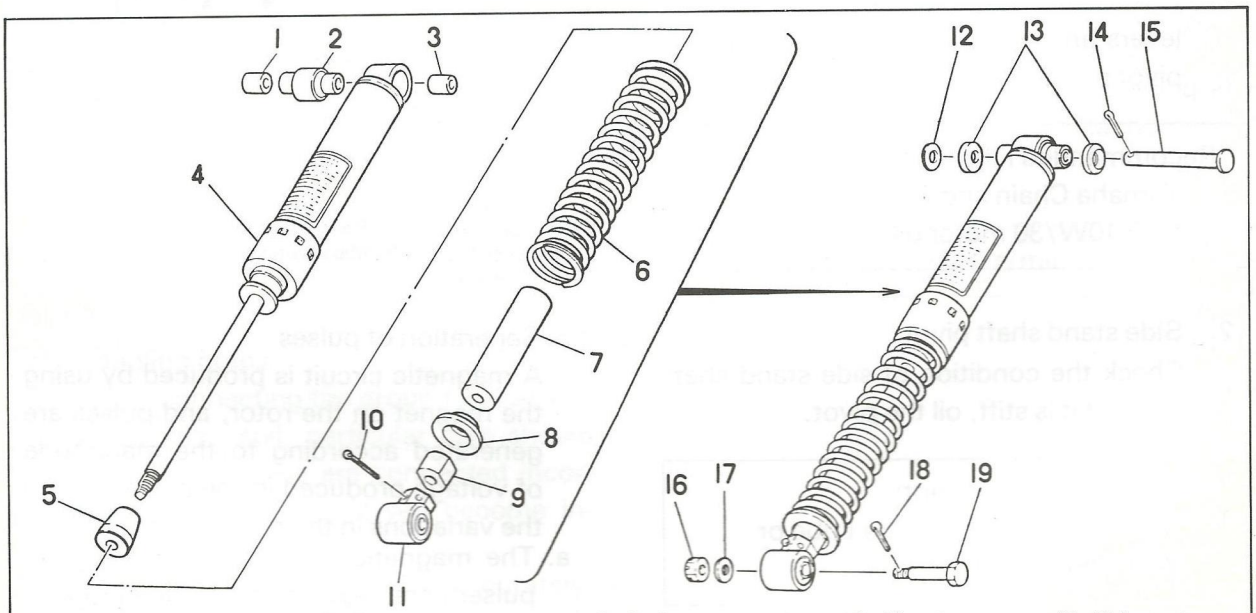
2. Turn the adjuster in or out until adjustment is suitable.

	Hard		STD	Soft	
Adjusting Position	2	1	*	1	2



1. Special wrench

3. Install the seat and tighten the securing bolt.



1. Solid bush
2. Lower bush
3. Solid bush
4. Dumper sub assembly
5. Bump stopper
6. Compression spring
7. Rod sleeve
8. Spring guide
9. Spring upper seat
10. Cotter pin
11. Upper bracket
12. Plate washer
13. Thrust cover
14. Cotter pin
15. Clevis pin
16. Slotted nut
17. Plain washer
18. Cotter pin
19. Bolt

Checking the drive chain tension

To check the chain play, the motorcycle must stand vertically with both its wheels on the ground and without a driver on it.

Then measure the play at the bottom of the chain at a point midway between the drive and driven sprockets.

NOTE:

Checking should be made with the tensioner in the relaxed position (not touching the chain).

The normal vertical deflection is approximately 40 ~ 50 mm (1.6 ~ 2.0 in). If the chain deflection is not as specified, adjust the chain tension.

Lubrication

1. Brake/Clutch pivot shaft
   Check the smooth operation of the levers and pedal. If not smooth, oil the pivot points.

Recommended lubricant: Yamaha Chain and Cable Lube or SAE 10W/30 motor oil

2. Side stand shaft pivot
   Check the condition of side stand shaft pivot. If it is stiff, oil the pivot.

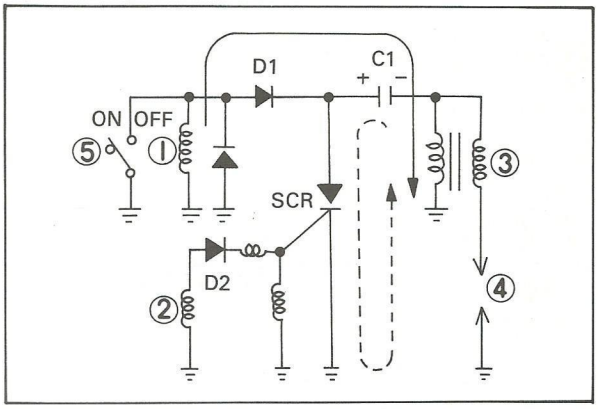
Recommended lubricant: Yamaha Chain and Cable Lube or SAE 10W/30 motor oil

E. ELECTRICAL

Capacitor discharge ignition (C.D.I.)

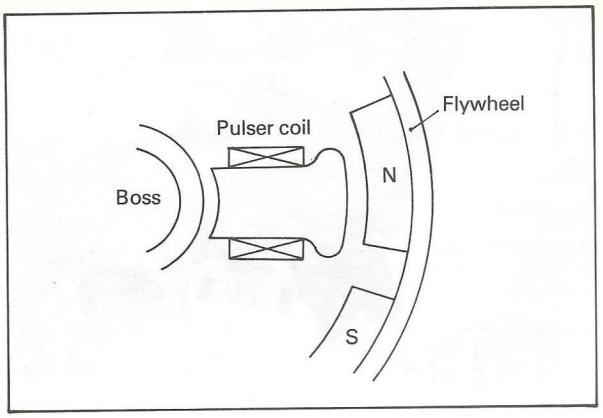
A capacitor discharge ignition (C.D.I.) system eliminates the need for a mechanical contact breaker and its inherent disadvantages. A simple electronic circuit using a large storage capacitor and a Thyristor (Silicon Control Rectifier) provides a correctly timed, high-intensity voltage to the spark plug.

1. Method of ignition operation
   The voltage generated by the charge coil is rectified by D1 (diode) and flows in the direction → thus charging C1 (capacitor). On the other hand, the voltage generated by the pulser coil is rectified by D2 then applied to SCR as a gate signal.
   When the signal reaches the trigger level, SCR becomes conductive, thus allowing C1 to discharge its current. The current follows in the direction of - - - ➤
   The charge in the current generates a high surge of voltage in the secondary winding of the ignition coil, thus causing a spark to jump.



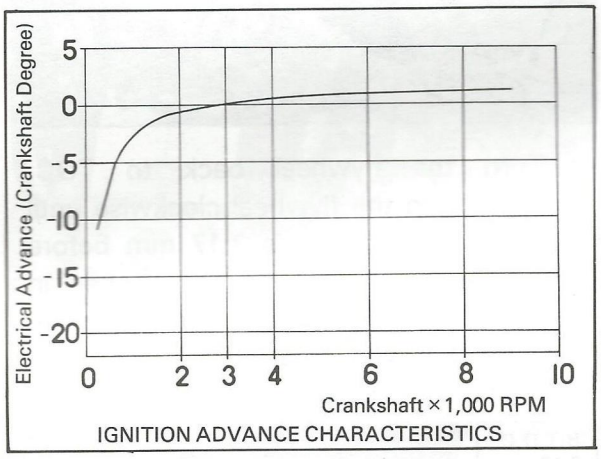
1. Charge coil
2. Pulser coil
3. Ignition coil
4. Spark plug
5. Main switch

2. Generation of pulses
   A magnetic circuit is produced by using the magnet on the rotor, and pulses are generated according to the magnitude of voltage produced in the pulser coil by the variations in the magnetic flux.
   a. The magnetic circuit is formed by the pulser core, boss, flywheel and magnet. As the rotor turns, the magnetic flux varies, and according to the variations, a voltage is produced in the pulser coil.



b. The voltage is generated in the pulser coil, and when it reaches the trigger level, the SCR becomes conductive, thus causing the capacitor to discharge and to induce a spark to jump at the spark plug.

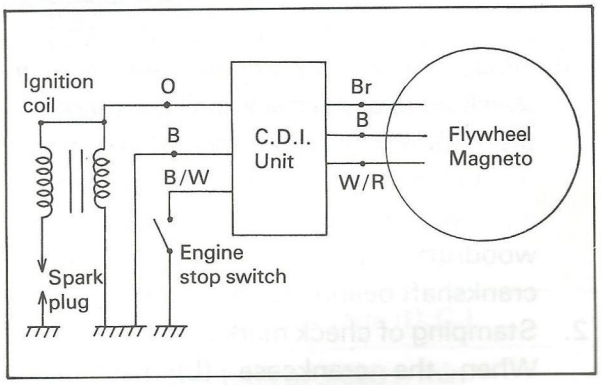
3. Ignition advance
Basically, ignition system has no ignition advance. Ignition timing slightly delays below 3,000 r/min due to electrical characteristics as illustrated below, and is not controlled.



IGNITION ADVANCE CHARACTERISTICS

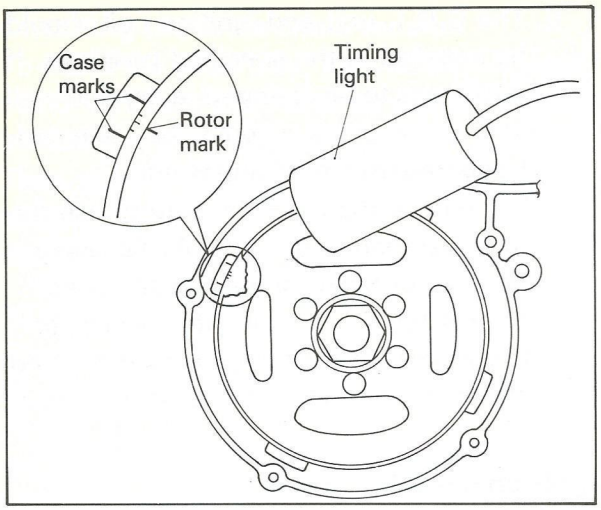
4. Handling notes
When connecting the ground circuit and the ignition coil, particular care should be taken. If these are connected incorrectly, the C.D.I. unit will become inoperative.
a. Connection must be done accurately. Special care is required for connection of the ground circuit and ignition coil.
b. The C.D.I. unit and ignition coil should be installed in the specified positions. If position is to be changed, a dry and well ventilated place should be selected. Keep free from mud and water.
c. To remove the rotor, be sure to use the flywheel magneto puller. Avoid using a hammer or the rotor may be damaged.
d. Handle the C.D.I. unit with special care. If you should drop it, the incorporated electronic components will be damaged.

Ignition circuit



1. Checking the ignition timing
Ignition timing is checked with a timing light by observing the position of the marks stamped on the case and the mark on the rotor.
a. Remove the crankcase cover (L).
b. Connect the timing light to the spark plug lead wire.
c. Start the engine and keep it running at the specified speed. Use a tachometer for checking.

Specified speed: 3,000 r/min



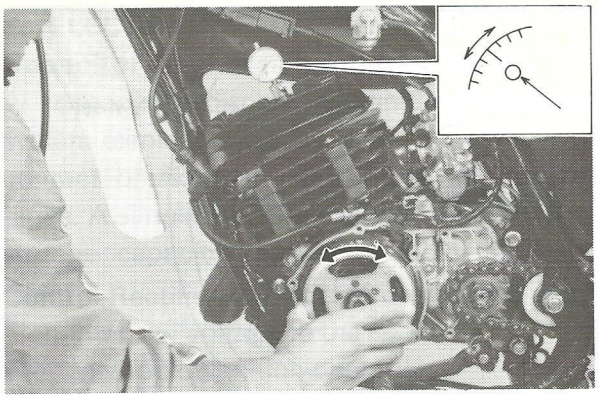
d. While keeping the engine running at a specified speed, check that the mark on the rotor is within the range of marks (A, B) stamped on the case. If the mark is not within the range, check the woodruff key for damage and/or crankshaft bearing for damage.

2. Stamping of check marks
When the crankcase (L) has been replaced, stamp marks on the case to indicate that the ignition timing has been checked, in the following way:

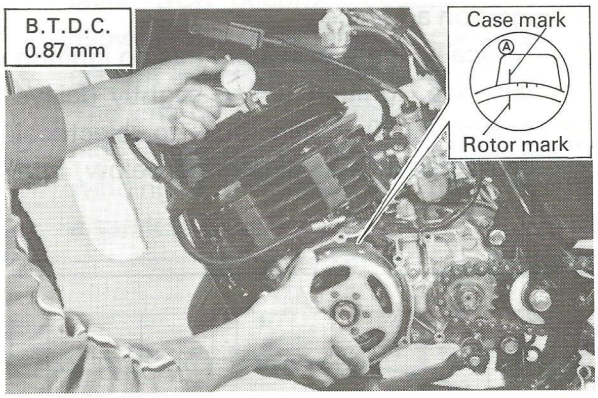
a. Shift transmission in neutral.

b. Remove the spark plug. Screw the dial gauge stand and the dial gauge into the plug hole.

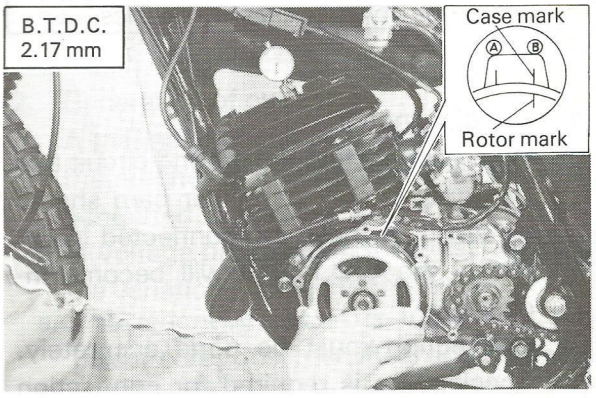
c. Rotate the magneto flywheel until piston is at top-dead-center (T.D.C.). Set the zero on the dial gauge face to line up exactly with a dial gauge needle. Tighten the set screw on the dial gauge stand to secure the dial gauge assembly. Rotate the flywheel back and forth to be sure that indicator needle does not go past zero.



d. Turn the flywheel clockwise, starting from TDC, and when the dial gauge reads 0.87 mm before TDC, hold the flywheel. With the flywheel in this position, stamp a mark (A) on the crankcase which is aligned with the mark on the rotor.



e. Turn the flywheel back to TDC. Again turn the flywheel clockwise until the dial gauge reads 2.17 mm before TDC, and hold it. With the flywheel in this position, stamp a mark (B) on the crankcase which is aligned with the mark on the rotor.

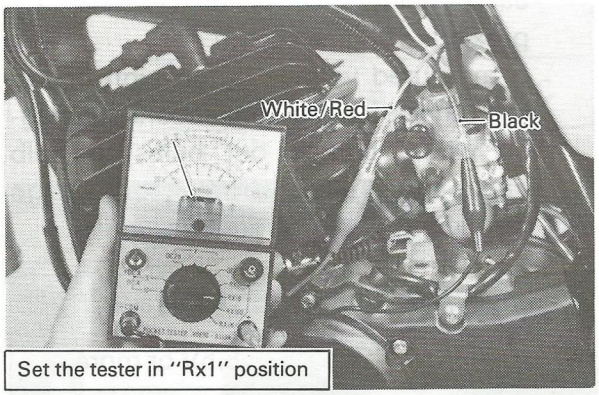


f. After stamping the mark, check the ignition timing.

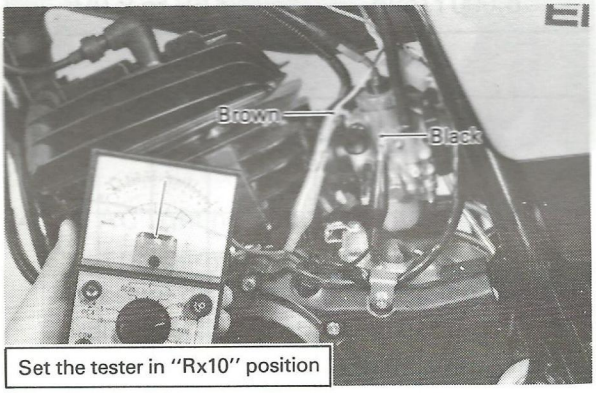
Checking the magneto charge coil and pulser coil

The resistance of the magneto charge coil and pulser coil are as specified below. To locate the cause of trouble (broken coil, short-circuit, etc.), disconnect the magneto lead wires under the fuel tank and measure the resistance across each lead.

Charge coil: Br—B 300Ω ± 10%
Pulser coil: W/R—B 10Ω ± 10%



Set the tester in "Rx1" position



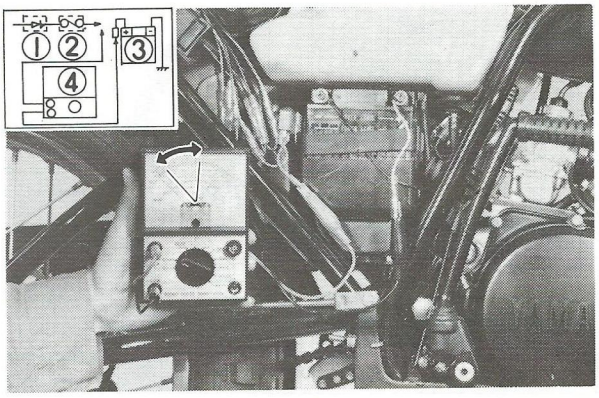
Set the tester in "Rx10" position

CHARGING SYSTEM

The charging system consists of the flywheel, the charging/lighting coil, rectifier, and battery. Alternating current from the charging/lighting coil flows to the headlight, meter lights, high beam indicator and, also, to the rectifier where it is converted to direct current for charging the battery. So long as all electrical load items are installed and working properly, the system does not require a regulator. This is due to the fact that as engine r.p.m. increases, frequency increases, lighting/charging coil impedance increases. This impedance increase acts to control the output of the magneto.

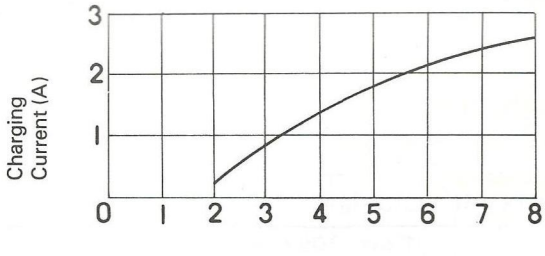
Charging amperage test

1. Connect the engine tachometer and start the engine.
2. Disconnect the red wire connection at the battery and connect Pocket Tester. Take amperage readings at specified speed.



1. Rectifier
2. Fuse
3. Battery
4. Set the tester in "DC. A-5" position

Charging amperage (D.C.)
0.5 ~ 1.1A at 3,000 r/min
2 ~ 3A at 8,000 r/min



CAUTION:

The battery must be fully charged when measuring the charging output test.

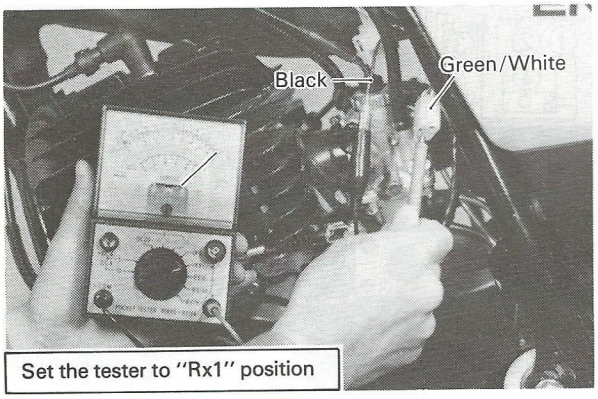
NOTE:

Disconnect the Pocket Tester before stopping the engine.

3. If the indicated amperage cannot be reached, perform the next test.

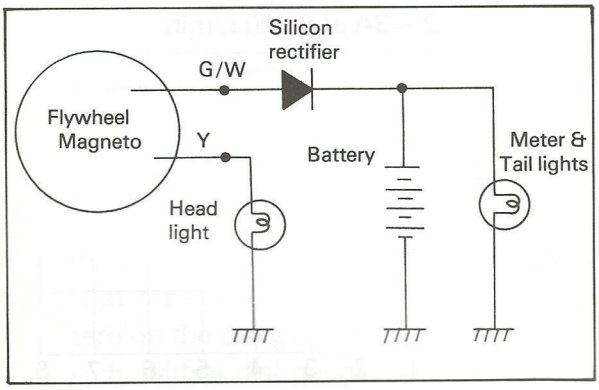
Charging coil resistance

Check the resistance between terminal and ground. If the resistance is out of specification, the coil is broken. Check the coil connections. If the coil connections are good, then the coil is broken inside and it should be replaced.



Set the tester to "Rx1" position

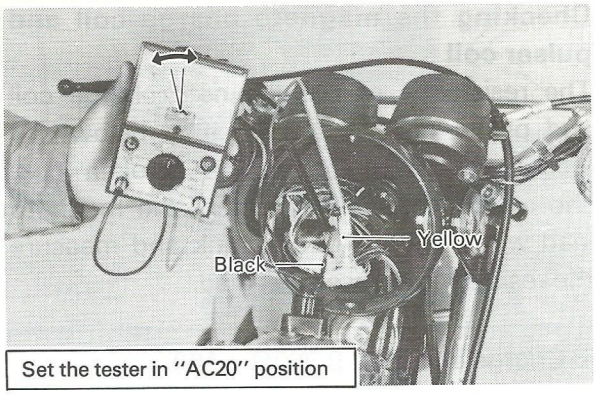
Charge coil resistance
Green/White — Ground: 0.30Ω ± 10%



Lighting output test

With all A.C. lights in operation, the circuit will be balanced and the voltage will be the same at all points at a given r/min.

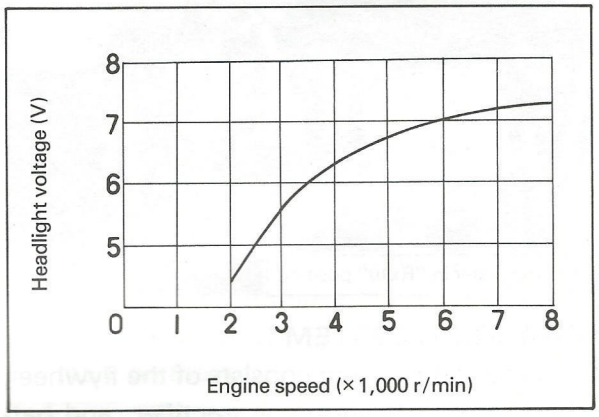
1. Switch Pocket Tester to "AC20V" position.
2. Connect positive (+) test lead to yellow connection and negative (−) test lead to a good ground.



Set the tester in "AC20" position

3. Start the engine, and check voltage at each engine speed in table below (approximate engine speed).
   If measured voltage is too high or too low, check for bad connections, damaged wires, burned out bulbs or bulb capacities which are too large throughout the A.C. lighting circuit.

Engine speed	Voltage
3,000 r/min	5.5V or more
8,000 r/min	7.6V to 8.0V



NOTE:

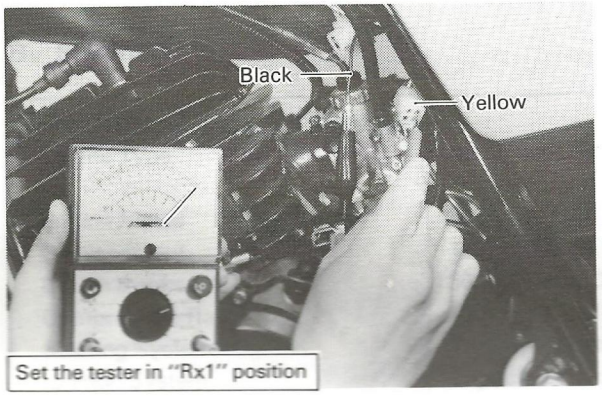
This voltage test can be made at any point throughout the A.C lighting circuit and the readings should be the same as specified above.

Lighting coil resistance check

If voltage is incorrect in A.C. lighting circuit, check the resistance of the yellow wire windings of the lighting coil.

1. Switch Pocket Tester to "rx1" position and zero meter.
2. Disconnect the magneto lead wires under the fuel tank.
3. Connect positive (+) test lead to yellow from magneto and negative (−) test lead to a good ground on engine. Read the resistance on the ohms scale.

Lighting coil resistance
Ground to yellow: 0.18Ω ± 10% at 20°C



Set the tester in "Rx1" position

4. If AC lighting circuit components check out properly but circuit voltage is still excessive, go to charging circuit checks. If voltage is low in charging circuit due to a defective battery, rectifier, or connection voltage will be too high in lighting circuit.

Circuit breaker

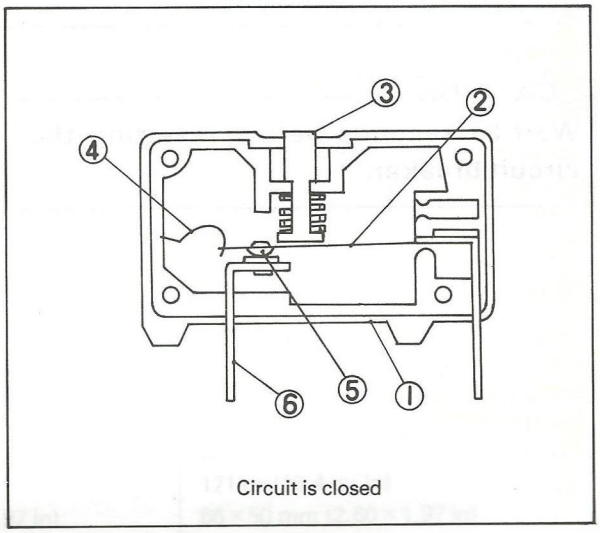
To protect an electric circuit against damage (burning or an extreme rise of temperature) caused by the flow of excess current, a device shich can automatically break the circuit is necessary. As a measure to break a circuit automatically, afuse can be used.

Fuse system:

A fuse is made of an easy-to-melt lead or tin alloy and connected in series to a circuit. Should an excess current flow, the fuse will quickly heat up and burnout, thus breaking the circuit automatically. In this way, the fuse can protect the circuit against damage.

In this fuse system, the fuse will have to be replaced each time it burns out. Not only that, the replacement involves the waste of time and labor, and sometimes the selection of a wrong fuse is possible. To eliminate this inconvenience, a circuit breaker is employed.

Construction diagram

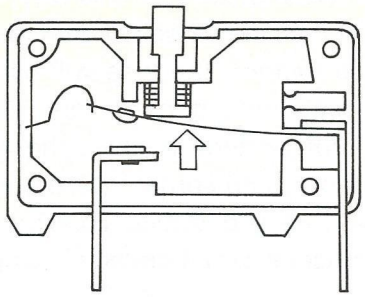


1. Case
2. Moveable spring (bimetal)
3. Knob
4. Semielliptic spring
5. Contact point
6. Terminal

Operation

If an excess current should flow through the above-shown circuit, the bimetal will heat up and deforme. When its deformation exceeds a certain amount, the bimetal forces the knob out. The bimetal is kept warped by the semielliptic spring.

In this manner, the circuit is left open. The circuit can be closed by simply pushing the knob down. By repeating this operation, the same circuit breaker can be used repeatedly.



Circuit is open
(In operation).

CAUTION:

Wait 30 seconds before resetting the circuit breaker.

7-1. GENERAL SPECIFICATION

A. General

Model	DT125G	DT175G
Model (I.B.M. No.)		
Frame I.D. & Starting Number	3J0-000101	3J1-000101
Engine I.D. & Starting Number	3J0-000101	3J1-000101
Dimension:		
Overall Length	2,085 mm (82.1 in)	2,095 mm (82.5 in)
Overall Width (standard)	850 mm (33.5 in)	850 mm (33.5 in)
Overall Height (standard)	1,100 mm (43.2 in)	1,120 mm (44.1 in)
Seat Height	795 mm (31.2 in)	825 mm (32.5 in)
Wheelbase	1,345 mm (53.0 in)	1,350 mm (53.1 in)
Minimum Ground Clearance	250 mm (9.8 in)	265 mm (10.4 in)
Weight:		
Net Weight	97 kg (214 lb.)	98 kg (216 lb.)
Performance:		
Minimum Turning Radius	2,150 mm (78.7 in)	2,200 mm (86.6 in)

B. Engine

Description:		
Engine Type	Air cooled, 2-stroke gasoline, Torque induction	←
Engine Model	3J0	3J1
Displacement	123 cc (7.5 cu.in)	171 cc (10.4 cu.in)
Bore × Stroke	56 × 50 mm (2.2 × 1.97 in)	66 × 50 mm (2.60 × 1.97 in)
Compression Ratio	10.6 : 1 (7.2 : 1)	10.1 : 1 (6.8 : 1)
Starting System	Primary kick starter	←
Ignition System	Capacitor Discharge Ignition	←
Lubrication System	Separate lubrication (Yamaha Autolube)	←
Cylinder head:		
Combustion Chamber Volume	14.7 cc (0.9 cu.in)	24.0 cc (1.5 cu.in)
Combustion Chamber Type	Dome + Squish	←
Head Gasket Thickness	0.5 mm (0.02 in)	←
Cylinder:		
Material	Cast iron	←
Bore Size	56 mm (2.2 in)	66 mm (2.6 in)
Taper Limit	0.05 mm (0.002 in)	←
Out of Round Limit	0.01 mm (0.0004 in)	←
Piston:		
Piston Skirt Clearance	0.035 ~ 0.040 mm	0.040 ~ 0.045 mm
Piston Over Size	56.25, 56.50, 56.75, 57.00 mm	66.25, 66.50, 66.75, 67.00 mm
Piston Pin Outside Diameter × Length	16 × 47 mm (0.63 × 1.85 in)	16 × 57 (0.63 × 2.24 in)

Model	DT125G	DT175G
Piston Rings:		
Piston Ring Design (Top)	Keystone	←
" (2nd)	Plane (with expander)	←
Ring End Gap (Installed) (Top)	0.3 ~ 0.5 mm (0.012 ~ 0.020 in)	←
" (2nd)	0.3 ~ 0.5 mm (0.012 ~ 0.020 in)	←
Ring Groove Side Clearance (Top)	0.02 ~ 0.06 mm (0.0008 ~ 0.0024 in)	←
" (2nd)	0.03 ~ 0.07 mm (0.001 ~ 0.0027 in)	←
Small end Bearing: Type	Needle bearing	←
Big end Bearing: Type	Needle bearing	←
Crankshaft:		
Crankshaft Assembly Width (F)	$56\ ^{-0.05}_{-0.10}$ mm ($2.2\ ^{-0.002}_{-0.004}$ in)	←
Crankshaft Deflection (A)	0.03 mm (0.001 in)	←
Connecting Rod Big End Side Clearance (C)	0.2 ~ 0.8 mm (0.008 ~ 0.03 in)	←
Connecting Rod Small End Deflection (S)	0.8 ~ 2.0 mm (0.031 ~ 0.079 in)	←
Crank Pin Outside Diameter × Length	22 × 55.6 mm (0.87 × 2.19 in)	←
Crank Pin Type	Hollow type	←
Crank Bearing Type (Left)	6205 C4	←
" (Right)	6304 C3	←
Crank Oil Seal Type (Left)	SD—25—40—8	←
" (Right)	SW—28—40—8	←
Clutch:		
Clutch Type	Wet, multiple disc type	←
Clutch Operating Mechanism	Inner push type, Cam axle	←
Primary Reduction Ratio & Method	71/22 (3.227), Helical gear	←
Friction Plate — Thickness/Quantity	3.0 mm (0.12 in) × 5 pcs.	3.0 mm (0.12 in) × 6 pcs.
— Wear Limit	2.7 mm (0.11 in)	←
Clutch Plate — Thickness/Quantity	1.2 mm (0.047 in) × 4 pcs.	1.2 mm (0.047 in) × 5 pcs.
— Warp Limit	0.05 mm (0.002 in)	←
Clutch Spring		
— Free Length/Quantity	33 mm (1.30 in) × 5 pcs.	←
— Wear Limit	0.05 mm (0.002 in)	←
Clutch Housing Axial Play (Wear Limit)	0.15 ~ 0.45 mm (0.006 ~ 0.018 in)	←
Push Rod Bending Limit	0.15 mm (0.006 in)	←
Transmission:		
Type	Constant mesh, 6 speed forward	←
Gear Ratio 1st (Teeth) (Ratio)	35/10 (3.500)	←
2nd	31/14 (2.214)	←
3rd	28/18 (1.555)	←
4th	25/21 (1.190)	←
5th	22/23 (0.956)	←
6th	20/25 (0.800)	←
Transmission Gear Oil Quantity & Type	650 ± 50 cc (Yamalube 4-cycle oil or SAE 10W/30 "SE" motor oil or "GL" gear oil	←
Secondary Reduction Ratio & Method	49/14 (3.500), Chain	49/16 (3.062), Chain
Shifting Mechanism:		
Type	Return type	
Kick Starter:		
Type	Primary	

Model	DT125G	DT175G
Intake:		
Air Cleaner — Type/Quantity	Wet-foam rubber	←
— Oil Grade	Yamalube 2-cycle oil or Air cooled 2-cycle oil	←
Induction System	Reed valve	←
Reed Valve:		
Type	V type	←
Bending Limit	0.3 mm (0.012 in)	←
Valve Lift	9 mm (0.35 in)	←
Carburetor:		
Type & Manufacturer/Quantity	Mikuni/VM22SS/1 pc	Mikuni/VM24SS/1 pc
I.D. Mark	3J000	3J100
Main Jet (M.J.)	#120	#150
Air Jet (A.J.)	ø0.5	ø0.5
Jet Needle (J.N.)	5GL11	5GL13
Needle Jet (N.J.)	N-8	N-4
Cutaway (C.A.)	2.5	2.0
Pilot Jet (P.J.)	#20	#22.5
Air Screw (turns out) (A.S.)	Pre-set	Pre-set
Starter Jet (G.S.)	#20	#20
Fuel Level (F.L.)	21.0 ± 0.5 mm	21.0 ± 0.5 mm
Engine Idling Speed	1,350 ~ 1,500 r/min	1,350 ~ 1,500 r/min
Lubrication:		
Autolube Pump		
— Color Code	Green	Gray
— Minimum Stroke	0.20 ~ 0.25 mm	←
— Maximum Stroke	1.85 ~ 2.05 mm	←
Autolube Pump		
— Reduction Ratio	24/22 × 62/1	24/22 × 40/1
— Minimum Output/at 200 cycle	0.50 ~ 0.63 cc	←
— Maximum Output/at 200 cycle	4.62 ~ 5.13 cc	←
Oil Tank Capacity	0.85 ℓ	←
Oil Grade	Yamalube 2-cycle oil or 2-cycle oil with "BIA certified for service TC-W"	←

C. Chassis

Frame:		
Frame Design	Tubular, double cradle	←
Steering System:		
Caster	30°	←
Trial	125 mm (4.92 in)	124 mm (4.88 in)
Number & Size of Balls in Steering Head		
Upper Race	3/16 in × 22	←
Lower Race	1/4 in × 19	←
Lock to Lock Angle	45°	←

Model	DT125G	DT175G
Front Suspension:		
Type	Telescopic fork	←
Damper Type	Coil spring, oil damper	←
Front Fork Travel	160 mm (6.3 in)	180 mm (7.1 in)
Front Fork Spring		
Free Length	453.5 mm (17.8 in)	546.5 mm (21.5 in)
Wire Diameter × Winding Diameter	3.2 mm (0.12 in) × 22.5 mm (0.88 in)	3.4 mm (0.13 in) × 22.4 mm (0.88 in)
Spring Constant	K_1: 0.25 kg/mm, K_2: 0.351 kg/mm (0 ~ 140 mm) (141 mm ~)	K_1: 0.25 kg/mm, K_2: 0.333 kg/mm (0 ~ 140 mm) (141 mm ~)
Inner Tube Outside Diameter	32 mm (1.26 in)	←
Oil Seal Type	SD—32—44—10.5	SD-32—44—10.5
Front Fork Oil Quantity & Type	183 cc (6.2 oz) Yamaha fork oil 10Wt or equivalent	← ←
Rear Suspension:		
Type	Monocross	←
Gas pressure	15 kg/cm²	←
Gas properties	Nitrogen gas	←
Absorber stroke	72 mm (2.83 in)	82 mm (3.23 in)
Wheel travel	130 mm (5.12 in)	150 mm (5.91 in)
Compression spring		
Free length	248 mm (9.76 in)	258 mm (10.16 in)
Set length	239 mm (9.41 in)	249 mm (9.8 in)
Spring constant	K_1 = 4.09 kg/mm, K_2 = 7.19 kg/mm	K_1 = 4.02 kg/mm, K_2 = 6.592 kg/mm
Number of windings	16.5 turns	16.75 turns
Spring diameter	9.0 mm (0.35 in)	←
Spring O.D.	57 mm (2.24 in)	←
Swing Arm Free Play	None	←
Pivot Shaft — Outside Diameter	12 mm (0.47 in)	←
Fuel Tank:		
Capacity	6.8 ℓ (1.85 US gal)	←
Fuel Grade	Regular or low lead gasoline	←
Wheel:		
Tire Size (Front)	2.75—21—4PR	←
(Rear)	3.50—18—4PR	←
Tire Pressure (Front)	1.7 kg/cm²	←
(Rear)	2.0 kg/cm²	←
Rim Size (Front)	1.60 × 21	←
(Rear)	1.85 × 18	←
Rim Run Out Limit (Front/Rear)		
Vertical	2 mm (0.08 in)	←
Lateral	2 mm (0.08 in)	←
Secondary Drive Chain Type		
Type	DID 428 HM	←
Number of Links	117	←
Chain Free Play	40 mm (1.57 in)	←
Brake:		
Front Brake		
Type	Leading, Trailing	←
Drum Diameter (Limit)	130 mm (5.12 in)	←
Shoe Diameter × Width	129.4 × 28 mm (5.09 × 1.1 in)	←

Model	DT125G	DT175G
Shoe Spring Free Length	36.5 mm (1.44 in)	←
Lining Thickness (Wear Limit)	2 mm (0.08 in)	←
Rear Brake		
Type	Leading, Trailing	
Drum Diameter	130 mm (5.12 in)	
Shoe Diameter	129.4 × 28 mm (5.09 × 1.1 in)	←
Shoe Spring Free Length	36.5 mm (1.44 in)	←
Lining Thickness (Wear Limit)	2 mm (0.08 in)	←

D. Electrical

Ignition System:		
Type	Capacitor Discharge Ignition	←
— Model/Manufacturer	F03T25171/Mitsubishi	←
— Voltage	6V	←
— Charge coil resistance	300Ω ± 10% (Br—Ground)	←
— Pulser coil resistance	10Ω ± 10% (W/R—Ground)	←
Flywheel puller thread size	M27 × 1.0	←
Ignition Timing:	17.5° B.T.D.C. at 3,000 r/min (1.45 mm ± 0.15 mm/ 0.057 ± 0.006 in)	←
Ignition Coil:		
Model/Manufacturer	F006T41174	←
Spark gap	6 mm (0.24 in)	←
Primary winding resistance	1.0Ω ± 15% at 20°C	←
Secondary winding resistance	5.9KΩ ± 20% at 20°C	←
Diode	No	←
Spark plug		
Type/Manufacture	B8ES/NGK	B9ES/NGK
Spark plug gap	0.6 ~ 0.8 mm (0.02 ~ 0.03 in)	←
CDI unit		
Type/Manufacture	F08T02471/Mitsubishi	←
Charging System:		
Flywheel magneto	F03T25171/Mitsubishi	←
Charging output	0.8A at 3,000 r/min	←
	2.4A at 8,000 r/min	←
Charge coil resistance (Green/White—Black)	0.30Ω ± 10%	←
Lighting output	5.5V or more at 5,000 r/min	←
	7.6V or less at 8,000 r/min	←
Lighting coil resistance (Yellow—Black)	0.18Ω ± 10%	←
Rectifier		
Type	Single phase/halfe wave	←
Capacity	3A	←
Withstand voltage	400V	←
Material	Silicon	←
Voltage Regulator:		
Type	A.C. Reg.	←
Model/Manufacture	SRS-610 (Stanly) F08T80071 (Mitsubishi)	←
Regulating voltage	7.2 ± 0.3V 7.0 ± 0.2V	←
Allowable amperage	10.2A 8.0A	←

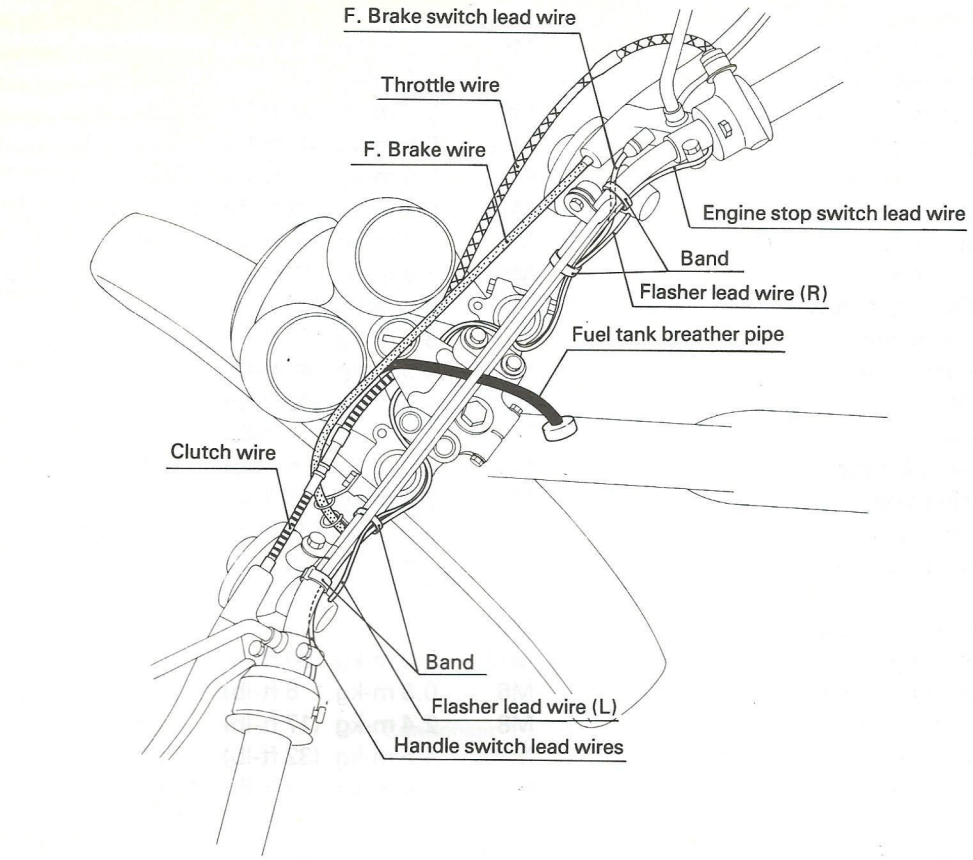
Model	DT125G	DT175G
Battery		
Model Manufacture	6N6-3B-1	←
Capacity	6V-6AH	←
Charging rate	0.6 × 10 hour	←
Specific gravity	1.26	←
Lighting System:		
Heat light type	Sealed beam	←
Bulb wattage		
Headlight wattage	6V, 35W/35W	←
Tail/stop light wattage	6V, 5.3W (3cp)/25W (32cp)	←
Flasher light wattage	6V, 17W	←
Flasher pilot light wattage	6V, 3W	←
Meter light wattage	6V, 3W	←
High beam indicator light wattage	6V, 3W	←
Neutral light wattage	6V, 3W	←
Oil level indicator light wattage	6V, 3W	←
Horn:		
Model	MF-6	←
Maximum amperage	1.5A	←
Flasher Relay:		
Type	Condenser	←
Flasher frequency	85 cycle/min.	←

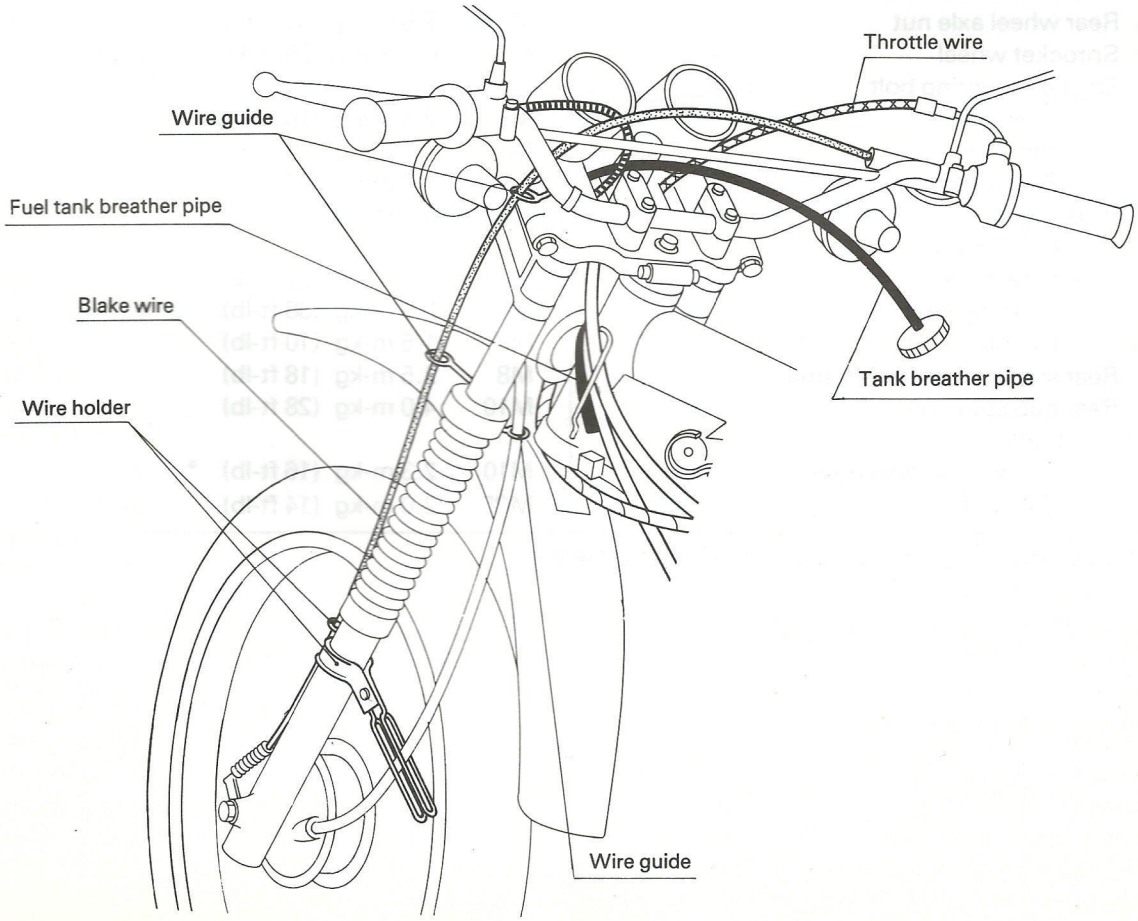
Tightening torque

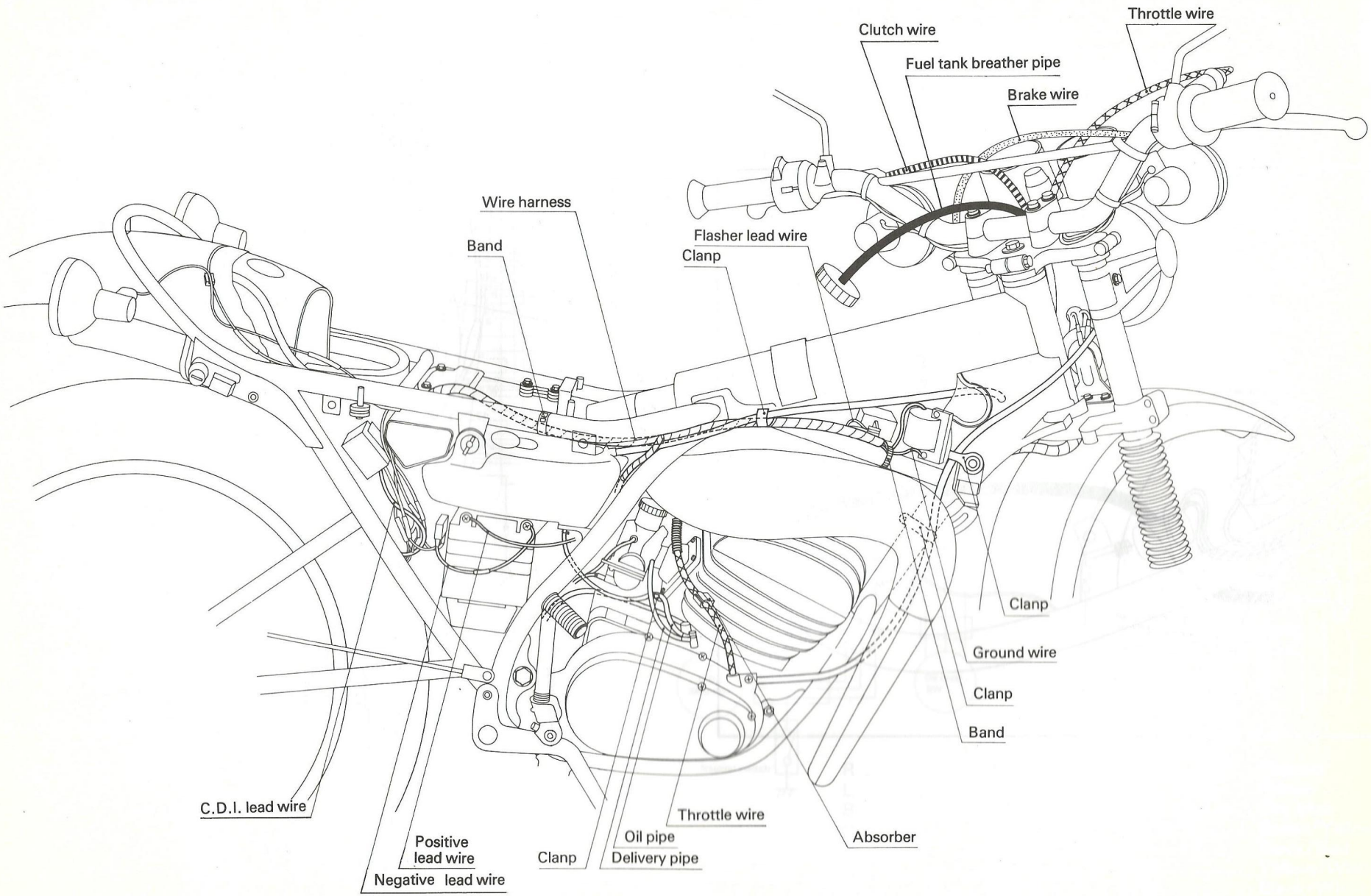
Engine:		
Bearing cover plate, Screw	M6	0.8 m-kg (5.8 ft-lb) *
Main axle cover plate, Bolt	M6	1.0 m-kg (7.2 ft-lb) *
Crankcase, Screw	M6	0.7 m-kg (5 ft-lb)
Drive sprocket, Nut	M16	5.5 m-kg (40 ft-lb)
Drain plug,	M12	2.0 m-kg (14 ft-lb)
Neutral switch	M12	0.4 m-kg (3 ft-lb)
Shift cam stopper bolt	M6	1.4 m-kg (10 ft-lb) *
Crank holder, screw	M8	1.6 m-kg (12 ft-lb) *
Push lever axle, stop screw	M8	0.8 m-kg (6 ft-lb)
Clutch adjusting screw	M8	3.0 m-kg (22 ft-lb)
Primary drive gear, Nut	M12	5.5 m-kg (40 ft-lb)
Clutch boss, Nut	M14	5.5 m-kg (40 ft-lb)
Push rod 1, Nut	M6	1.0 m-kg (7 ft-lb)
Crankcase cover, Screw	M6	0.9 m-kg (6 ft-lb)
Kick crank fitting bolt	M8	2.5 m-kg (18 ft-lb)
Cylinder tightening nut	M10	3.5 m-kg (25 ft-lb)
Cylinder head tightening nut	M8	2.5 m-kg (18 ft-lb)
Spark plug	M14	2.5 m-kg (18 ft-lb)
Magnet base plate, Screw	M6	0.8 m-kg (6 ft-lb)
Magneto tightening nut	M12	7.0 m-kg (50 ft-lb)
Intake manifold fitting bolt	M6	0.8 m-kg (6 ft-lb)
Cylinder head stud bolt	M8	2.4 m-kg (17 ft-lb)
Crankcase stud bolt	M10	4.5 m-kg (32 ft-lb)
Oil pump fitting screw	M5	0.4 m-kg (3 ft-lb) *
Chassis:		
Front wheel axle nut	M10	4.0 m-kg (28 ft-lb)
Rear wheel axle nut	M14	8.5 m-kg (61 ft-lb)
Sprocket wheel	M10	4.0 m-kg (28 ft-lb)
Engine mounting bolt		
— Front	M8	2.5 m-kg (18 ft-lb)
— Rear upper	M8	2.5 m-kg (18 ft-lb)
— Rear lower	M10	4.0 m-kg (28 ft-lb)
Pivot shaft	M12	4.2 m-kg (30 ft-lb)
Handle crown		
— Inner tube	M10	3.4 m-kg (24 ft-lb)
— Steering shaft	M14	5.3 m-kg (38 ft-lb)
— Handle holder	M8	1.5 m-kg (10 ft-lb)
Rear shock absorber—frame	M8	2.5 m-kg (18 ft-lb)
Rear hub stud bolt	M10	4.0 m-kg (28 ft-lb)
Front fork		
— Cylinder holding bolt	M10	2.3 m-kg (16 ft-lb) *
— Cap bolt	M25	2.0 m-kg (14 ft-lb)

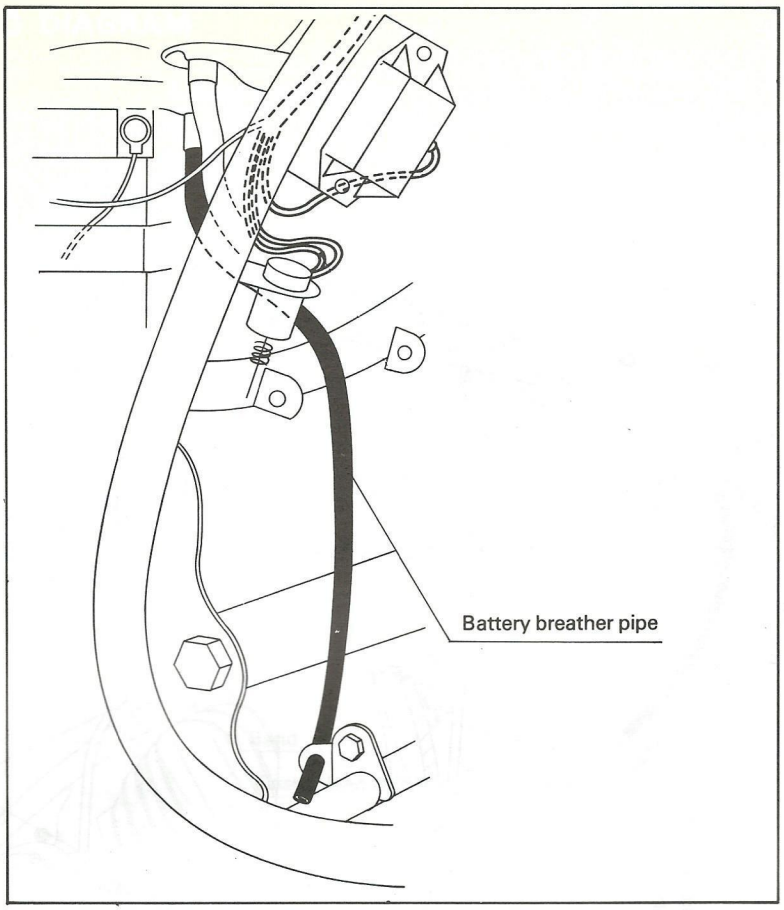
*: Apply a holding agent, such as "LOCTITE" to threads.

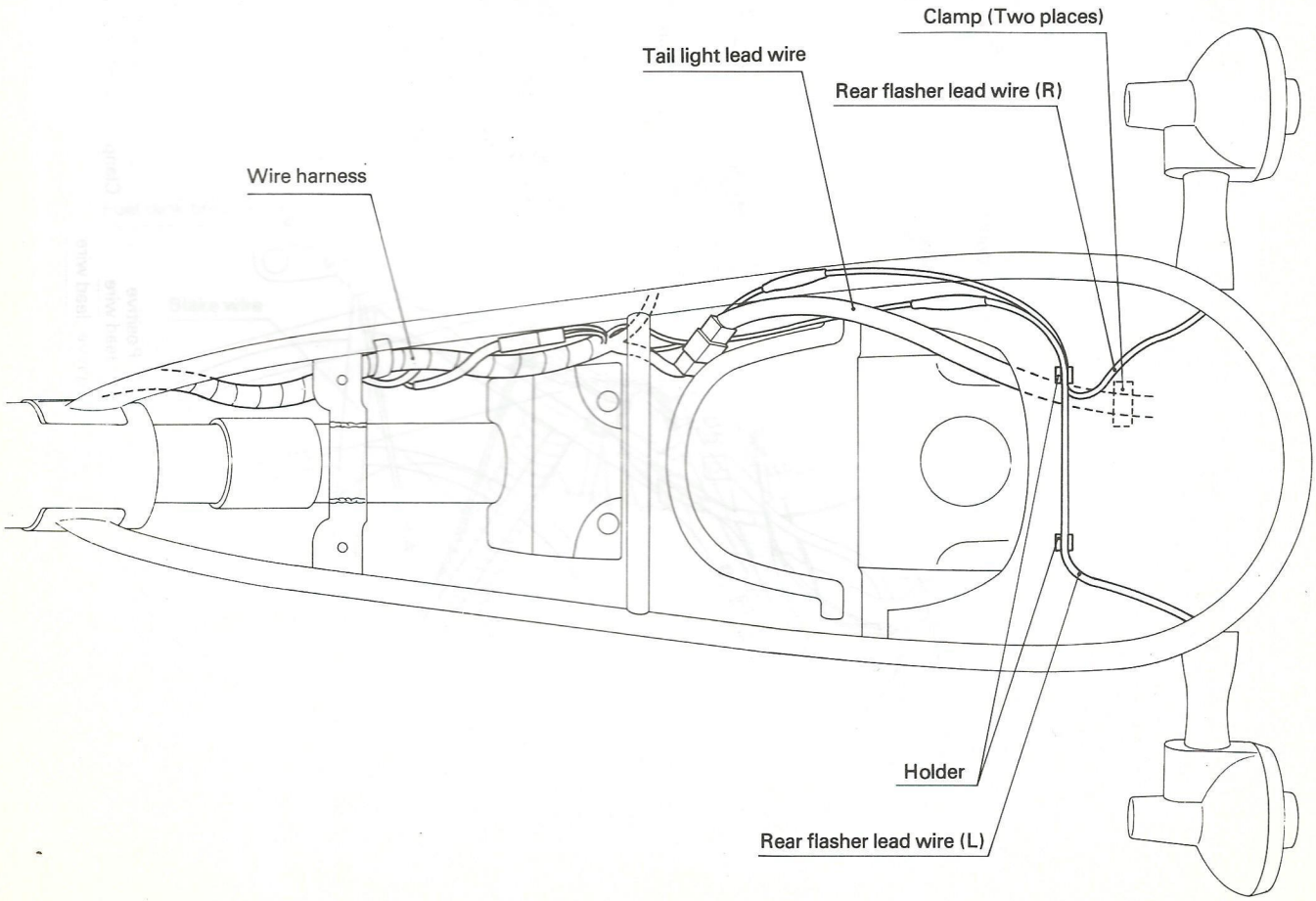
CABLE ROUTING DIAGRAM



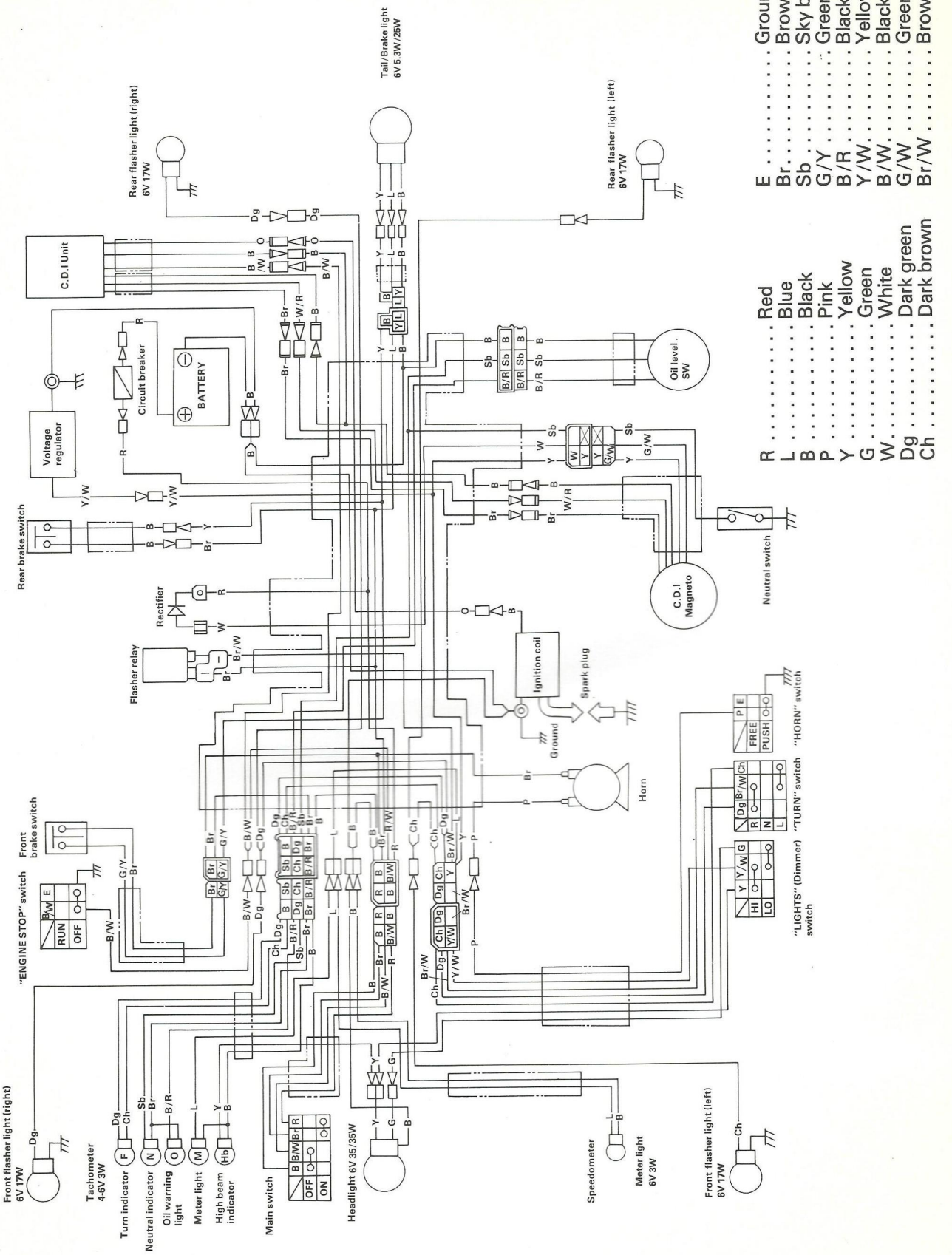



Throttle wire
Clutch wire
Fuel tank breather pipe
Brake wire
Wire harness
Band
Flasher lead wire
Clanp
Clanp
Ground wire
Clanp
Band
C.D.I. lead wire
Positive lead wire
Negative lead wire
Clanp
Oil pipe
Delivery pipe
Throttle wire
Absorber


Battery breather pipe


Clamp (Two places)
Tail light lead wire
Rear flasher lead wire (R)
Wire harness
Holder
Rear flasher lead wire (L)

WIRING DIAGRAM



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