



YAMAHA

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GT80E

ASSEMBLY MANUAL

FOR GT80E MODELS AFTER ENGINE SERIAL NUMBER 2F4-010801.



90894-07803

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 machine.

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



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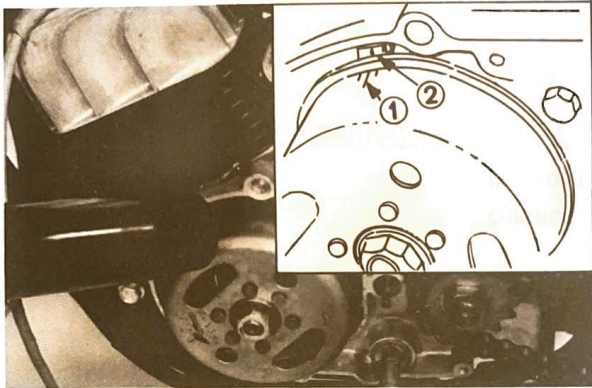
**YAMAHA GT80E
ASSEMBLY MANUAL
1st EDITION, DECEMBER, 1977
OVERSEAS SERVICE DEPARTMENT
YAMAHA MOTOR CO., LTD
IWATA, JAPAN
LIT-11666-01-06**

Please supersede the table for IGNITION TIMING on page 21 to 22 of this manual with the following one which reads:

Ignition timing

1. Checking

Ignition timing is checked with a timing light by observing the position of the stationary mark stamped on the crankcase and the pointers on the magneto flywheel.



1. Pointers 2. Stationary mark

- a. Connect timing light to spark plug lead wire.
- b. Start the engine and engine speed as specified.

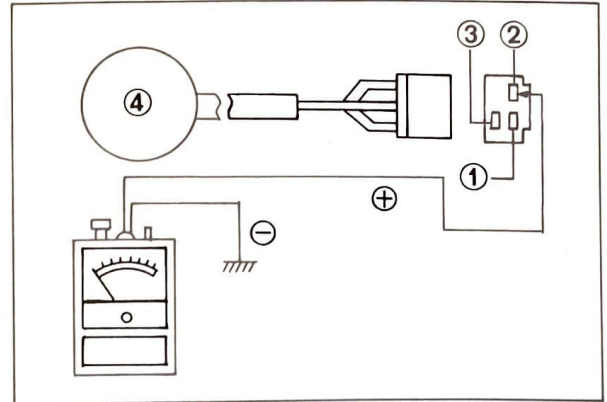
Specified speed = 1,250 — 1,400 r/min.

- c. The center pointer of the magneto flywheel should line up the stationary mark on the crankcase at a specified engine speed.

2. Adjustment

If the marks are out of alignment, proceed as follows;

- a. Switch on the point checker and adjust it. Disconnect the magneto harness from the main harness. Connect the red lead of Point Checker to the black wire pin in the wire harness connector coming from the magneto.
- b. Connect the black lead of Point Checker to the unpainted surface of the cylinder fin, or the unpainted crankcase bolt, or the screw.



1. Blue 3. Green/Red
2. Black 4. Flywheel magneto

- c. Rotate the flywheel counterclockwise until the center pointer on the flywheel aligns the stationary mark on the crankcase. At the same time, the point checker needle should swing from the "CLOSED" to "OPEN" position, indicating that the ignition points have just begun to open.
- d. Loosen the contact breaker holding screw, and using a slottedhead screwdriver turn the contact breaker to adjust the ignition timing.
- e. Tighten the screw, and check the ignition timing according to the step c. above.

FOREWORD

The Assembly Manual contains the information required to unpack and assemble Yamaha motorcycles correctly prior to delivery to the customer. Proper motorcycle set-up assembly and pre-delivery service demands a basic knowledge of motorcycle service procedures, familiarity with Yamaha products, and correct tools. This assembly manual should be used with the Dealer Set-up and Pre-delivery Check List, Service Manual, Supplementary Service Manual, and Parts List for this model.

Proper set-up, assembly and pre-delivery service is necessary for the following reasons:

- To assure the customer of the long life and performance he expects from his new Yamaha motorcycle.
- To minimize service problems during the break-in period.
- To conform with federal new vehicle regulations.

NOTICE

The service specifications given in this manual are based on the model as manufactured. Modifications and significant changes in specifications and/or procedures will be forwarded to all Authorized Yamaha Dealers.

The procedures below are described in the order that the mechanic should follow. Special care should be taken to ensure that the procedures are carried out correctly and completely. Failure to do so can result in poor performance, excessive emissions, and possible harm to the machine and/or rider.

The DEALER SET-UP AND PRE-DELIVERY CHECK LIST has been designed to be used with this Assembly Manual. As each procedure is satisfactorily completed, the mechanic should mark the appropriate space on the sheet. After it has been signed by the assembling mechanic, the servicing mechanic, and the customer, a copy of the Check List should be given to the customer and another copy retained in the dealership files. If the Service Manager test rides the machine before delivery, he should also sign the Check List.

IMPORTANT

This Assembly Manual contains important information regarding procedures designed to ensure proper emissions control functioning and service. Please read this material carefully and carry out the prescribed procedures properly!

CONCERNING CRATE DAMAGE:

Follow the instructions in the Dealer Warranty Handbook, Procedure Section.

UNPACKING

Note on transportation

Use care not to butt the machine packed in the crate against a hard object or give it a heavy shock during transportation or in the service shop.

PREPARATION

To assemble the machine correctly, the following supplies and working space are required:

Supplies

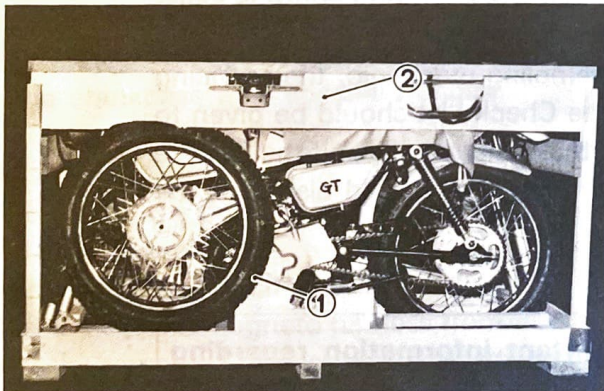
Oils, greases, shop rags, electrical contact cleaner, solvent for cleaning.

Workshop

The workshop where the machine is assembled should be clean and large. The floor should be level.

Procedure for unpacking

To remove the machine and parts packed in the card board crate, cut the vinyl bands around the box using a cutter or scissors. Next, remove the exterior carton by lifting it straight up. Remove foam tray and front wheel.



1. Front wheel 2. Foam tray

Remove the nails from each corner of the crate, and remove the struts.

Remove the front fender held between the rear tire and the rear fender.

Lift up the machine, and remove the rear wheel section from the lower wooden case. Then take the machine completely out of the crate.

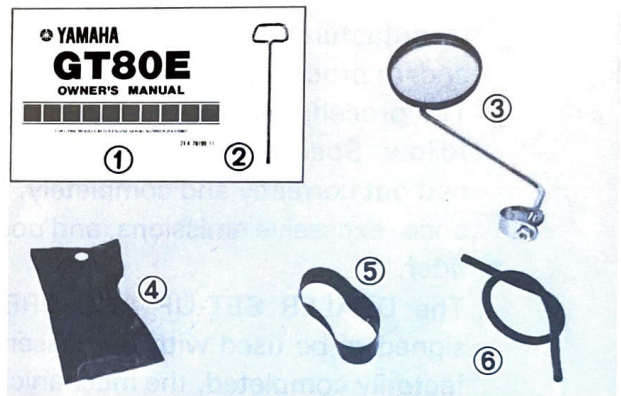
PARTS CHECK LIST

Before starting the assembly, check for damaged or missing parts (listed below). Also check the machine for damage, scratches and other defects.

The following parts are contained in the card board box and the vinyl bag in the box. Check the quantity of parts. Also check for damage.

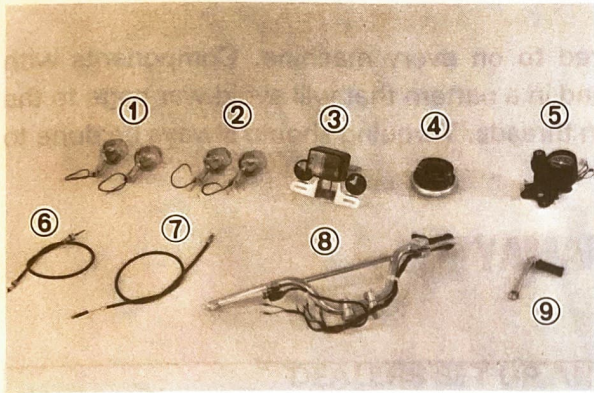
Parts List: Card board box

No.	Name	Q'ty
1	Owner's manual	1
2	Oil level gauge	1
3	Rear view mirror	1
4	Tool kit	1
5	Battery band	1
6	Hose	1



Parts List: Foam tray

No.	Name	Q'ty
1	Front flasher light (R,L)	2
2	Rear flasher light (R,L)	2
3	Tail light ass'y	1
4	Brake shoe plate ass'y	1
5	Speedometer ass'y	1
6	Meter cable ass'y	1
7	Front brake wire	1
8	Handlebar ass'y	1
9	Kick crank	1

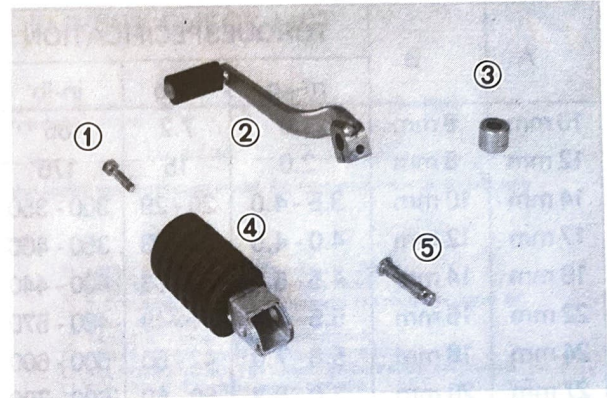
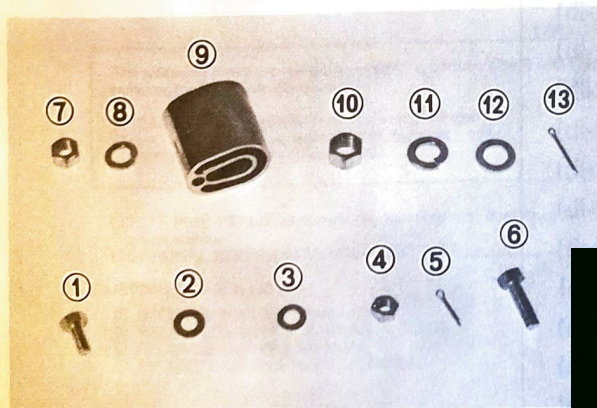


Part List: Vinyl bag 2

No.	Name	Q'ty	Remark
1	Hexagon bolt	1	Kick crank
2	Shift pedal	1	—
3	Collor	1	F. wheel
4	Footrest (R)	1	Footrest
5	Clevis pin	1	

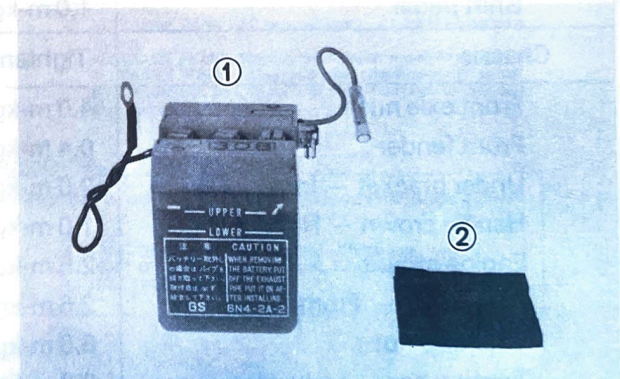
Part List: Vinyl bag 1

No.	Name	Q'ty	Remark
1	Hexagon bolt (M6 x 12)	2	Tail light
2	Plain washer	2	
3	Spring washer	2	
4	Nut	2	
5	Split pin	1	Foot rest
6	Hexagon bolt (M6 x 20)	2	Shift pedal
7	Nut (M8)	4	Flasher light
8	Spring washer	4	
9	Flasher collar (R, L)	2	
10	Nut (M10)	2	Handlebar
11	Spring washer	2	
12	Plain washer	2	
13	Split pin	1	Front wheel



Parts List: Temporarily fitting to frame

No.	Name	Q'ty
1	Battery	1
2	Battery seat	1



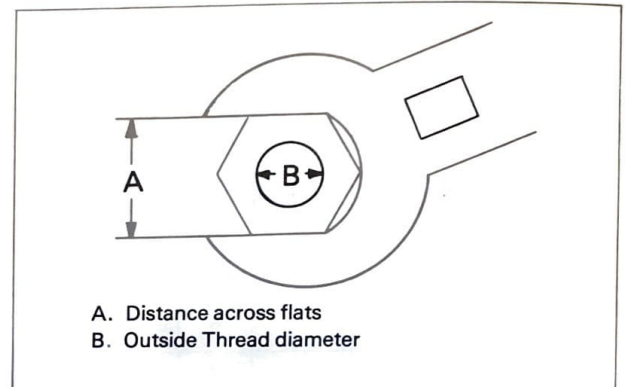
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TORQUE SPECIFICATIONS

The following torque specifications must be adhered to on every machine. Components with several studs should be tightened in gradual stages and in a pattern that will avoid war page to the item being secured. Torque settings are for dry, clean threads. Torquing should always be done to the nut, never the bolt head.

Standard torque setting

A	B	TORQUE SPECIFICATION		
		m-kg	ft-lb	in-lb
10 mm	6 mm	1.0	7.2	85
12 mm	8 mm	2.0	15	175
14 mm	10 mm	3.5 - 4.0	25 - 29	300 - 350
17 mm	12 mm	4.0 - 4.5	29 - 33	350 - 400
19 mm	14 mm	4.5 - 5.0	33 - 36	400 - 440
22 mm	16 mm	5.5 - 6.5	41 - 49	480 - 570
24 mm	18 mm	5.8 - 7.0	42 - 50	500 - 600
27 mm	20 mm	7.0 - 8.3	50 - 60	600 - 700



Engine	Tightening torque
Spark plug	2.5 m-kg (18 ft-lb)
Oil pump cover	0.8 m-kg (6 ft-lb)
Drain plug	2.0 m-kg (14 ft-lb)
Kick crank	1.0 m-kg (8 ft-lb)
Shift pedal	1.0 m-kg (8 ft-lb)
Chassis	Tightening torque
Front axle nut	4.0 m-kg (29 ft-lb)
Front fender	0.4 m-kg (3 ft-lb)
Under bracket — Inner tube	2.0 m-kg (14 ft-lb)
Handle crown — Handle under	1.0 m-kg (7 ft-lb)
Engine mount	2.5 m-kg (18 ft-lb)
Pivot shaft — Frame	2.5 m-kg (18 ft-lb)
Rear axle nut	6.0 m-kg (43 ft-lb)
Tension bar — brake plate	2.0 m-kg (14 ft-lb)
Rear arm	2.0 m-kg (14 ft-lb)
Rear absorber — Frame	3.0 m-kg (21 ft-lb)
Rear arm	3.0 m-kg (21 ft-lb)
Rear fender — Bracket	0.5 m-kg (4 ft-lb)
Seat rail	0.5 m-kg (4 ft-lb)



YAMAHA MOTORCYCLE

DEALERS SET UP AND PREDELIVERY CHECK LIST

I hereby certify that prior to delivery to the retail purchaser, assembly and pre-delivery service was performed on the motorcycle listed below in accordance with the following check list and in compliance with established procedures prescribed by Yamaha.

MODEL _____ FRAME NO. _____ ENGINE NO. _____

Assemble according to the assembly manual and any technical bulletin information that applies to this particular model. Pay special attention to the following items.

SET-UP ASSEMBLY

- FRONT FORK PINCH BOLTS - Torque to specification
- FRONT WHEEL AND AXLE - Torque axle and axle holder to specifications
- FRONT AXLE COTTER PIN - Install
- HANDLEBAR HOLDER (spring tension type) - Position die marks on holder to front, torque to specifications
- HANDLEBAR HOLDER (standard) - tighten bolts evenly, in a crisscross pattern until proper torque is attained
- WIRING CONNECTORS - Check for color code and proper connection
- FRONT BRAKE CABLE (drum brake) - Install
- MASTER CYLINDER (disc brake) - Install
- INSTRUMENTS - Install instruments and route the cables as shown on cable routing diagrams
- TAILLIGHT - Install on applicable models
- BRAKE PEDAL - Install per assembly manual
- ALL NUTS AND BOLTS - Check tightness and proper torque
- CONTROLS - Check for proper operation
- KEYS - Check all locks for proper operation

SET-UP BY _____ DATE _____

PRE-DELIVERY SERVICE

- ALL NUTS AND BOLTS - Check for torque and tightness, especially Engine mounting bolts and/or nuts Steering head, Rear swing arm pivot shaft Axles
- HYDRAULIC DISC BRAKES (front & rear) - Check master cylinder fluid level, bleed systems, check and adjust free play, and check operation
- TWIN FRONT DISC BRAKE - Check clearances between caliper brackets and disc, reposition if necessary
- TIRES - Adj. pressure: front__ rear__
- SPOKES - Check tightness
- FUEL FILTER SCREEN AND FUEL LINE - Clean and check for connection tightness
- CARBURETOR - Drain stale fuel from lines and float bowls
- CARBURETOR - Tighten caps and mounting bolts
- CARBURETOR - Adjust starter lever freeplay (if applicable)
- CARBURETOR - Adjust throttle cable freeplay
- MECHANICAL BRAKES - Check and adjust freeplay, check operation
- CLUTCH - Check and adjust freeplay
- COMPRESSION RELEASE CABLE (if applicable) - Check and adjust freeplay
- ENGINE/TRANSMISSION OIL - Drain and refill, qty__ type__
- SHAFT DRIVE GEAR OIL LEVELS - Check oil levels, add as necessary
- BATTERY - Charge until specific gravity reaches 1.26 - 1.28 according to Service Manual procedure. Install and route breather tube checking for restrictions
- ELECTRICAL COMPONENTS - Check for proper operation of: Headlamp (Hi, Lo), Turn signals, (Stoptight front, rear), Taillight, Indicator lights, Instrument lights, Horn
- DRIVE CHAIN - Lubricate, if necessary, and adjust, align rear wheel
- FOAM AIR FILTER - Service

2-STROKE ONLY:

- AUTOLUBE TANK - Fill tank, oil type__ Check breather tube routing
- AUTOLUBE PUMP - Bleed air from pump and all lines
- AUTOLUBE PUMP - Adjust cable and check minimum stroke
- AUTOLUBE OIL DELIVERY - Check oil delivery to cylinders and for leaks

EXHAUST EMISSIONS CONTROL

The following items are related to emissions control. Check and adjust if necessary in accordance with the Yamaha published service manual and technical bulletins for this particular model.

- CAM CHAIN TENSIONER (if applicable) - Adjust
- VALVES - Clearance: Intake__mm, Exhaust__mm
- SPARK PLUG GAP - Check: __mm
- IGNITION POINTS (if applicable) - Check gap__mm
- IGNITION TIMING Check: idle, Advance
- IDLE SPEED - Check: __rpm

- TEST RIDE - Check performance, handling and operation, adjust mirrors
- OPTIONAL SERVICE MANAGER TEST RIDE _____

Service Manager Signature _____

CUSTOMER CHECK LIST

- RECEIVED TOOL KIT (if applicable)
- RECEIVED OWNERS WARRANTY GUIDE
- RECEIVED OWNERS MANUAL
- RECEIVED SERVICE INSTRUCTIONS

I have performed the pre-delivery adjustments as specified in the assembly manual, service specifications and any technical bulletins applying to this model.

CUSTOMER DATE

PRE DELIVERED BY DATE

DEALERSHIP NAME _____

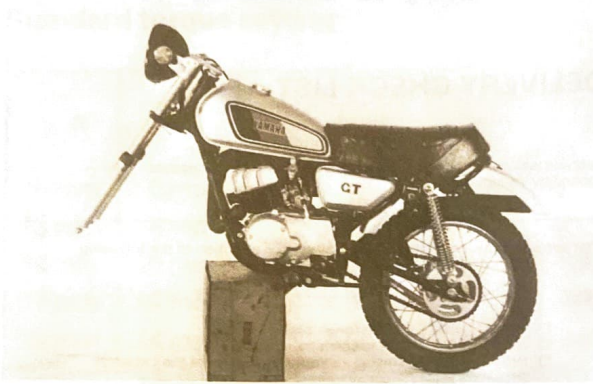
DEALER NO. _____

ADDRESS _____

CITY/STATE/ZIP CODE _____

SET-UP PROCEDURES

1. To set up the machine, place a proper-size wooden box or a wooden block under the engine to keep the front of the machine raised off the floor. Take care so that the machine does not fall over.

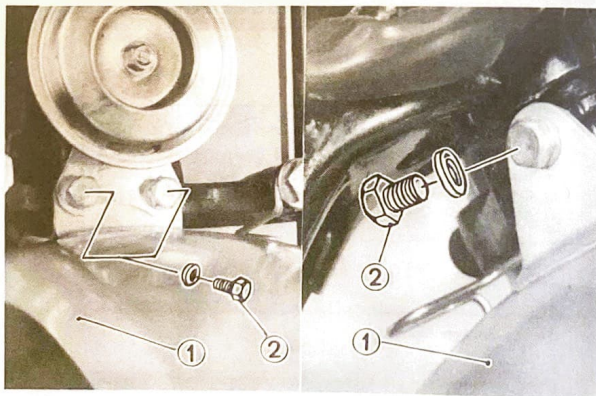


2. Insert the front fender between the front forks and secure the front fender using 6 mm bolts and spring washers.

Tightening torque:
0.4 m-kG (3ft-lb)

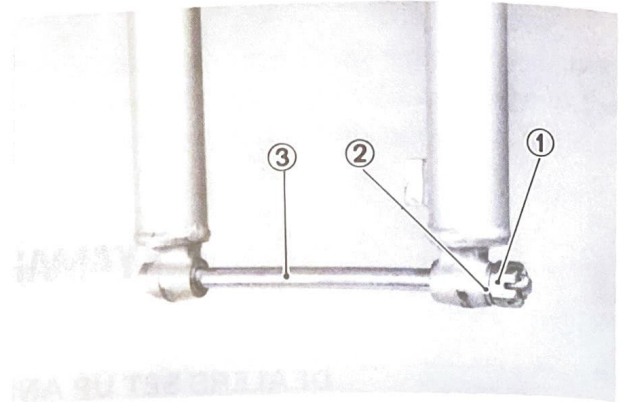
NOTE

Bolts and spring washers are fitted to the under bracket.



1. Front fender 2. Bolt

3. Remove the front wheel axle nut and plain washer. Then remove the wheel axle.



1. Wheel axle nut 2. Plain washer 3. Wheel axle

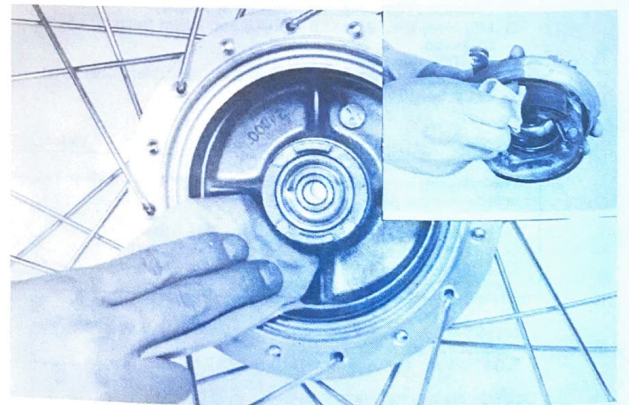
4. Install the brake shoe plate assembly in the front wheel hub.
 - a. Apply a light coat of grease to the speedometer drive gear and oil seal.

CAUTION:

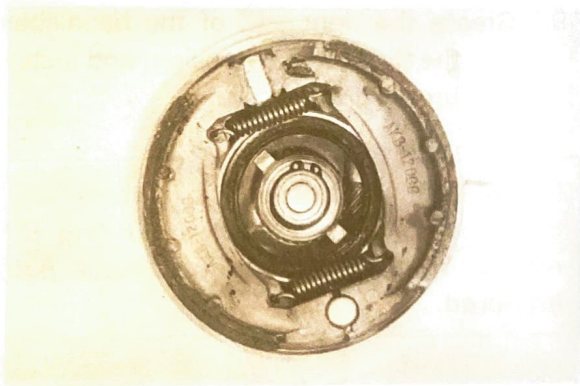
Take care not to put grease on the brake linings or inner surface of the brake drum. If do so, clean using a rag dampened with solvent.

Foreign material on braking surface can cause impaired braking action.

- b. Clean the inner surface of the front wheel hub with a clean cloth.



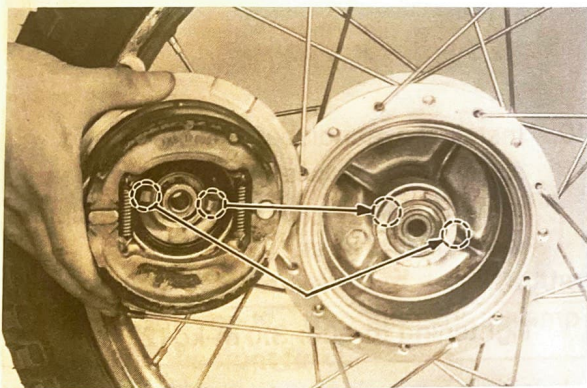
- c. Make sure the brake shoes and springs are correctly installed in the shoe plate assembly. If any one of them is out of place, correct per the figure.



d. Install the brake shoe plate assembly in the wheel hub.

NOTE:

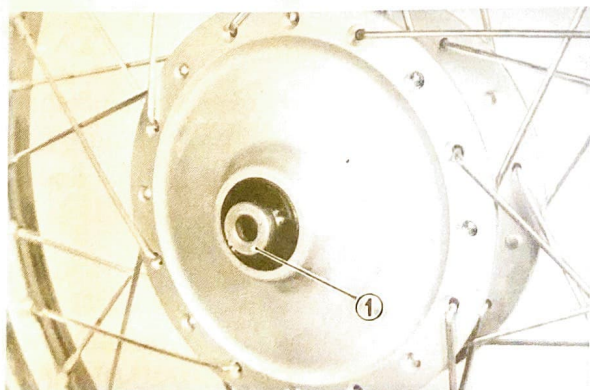
Make sure the two legs in the wheel hub align with the two slots in the speedometer clutch assembly.



e. Install the wheel axle collar in the wheel hub on the right side of the front wheel.

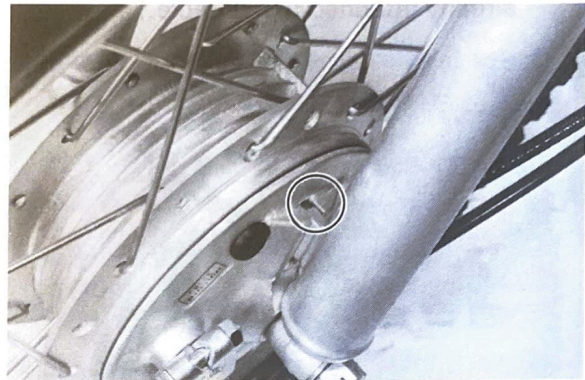
NOTE:

To avoid damaging the oil seal lip, apply a light coat of lithium base grease to the oil seal lip and axle collar. If the collar is dirty, clean with a rag.

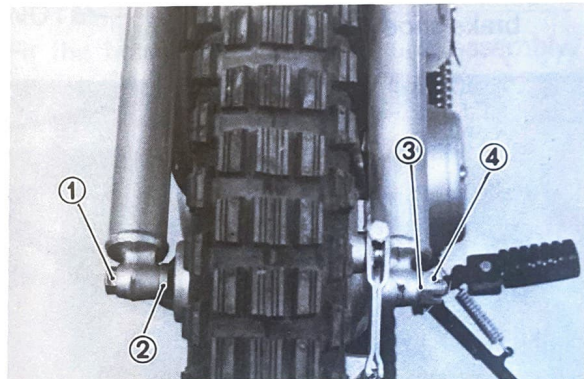


1. Wheel axle collar

5. Install the front wheel on the front forks.
 - a. Insert the front wheel between the front legs so that the stopper (projection) on the front fork outer tube correctly engages the slot in the brake shoe plate.



- b. Insert the axle, and install the plain washer and the axle nut.

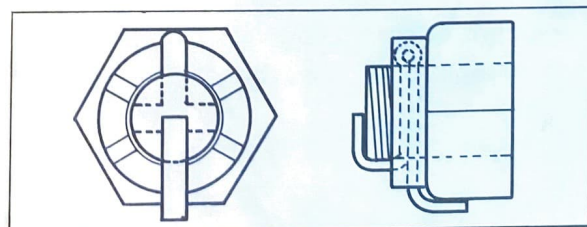


1. Wheel axle 2. Axle collar 3. Plain washer 4. Wheel axle

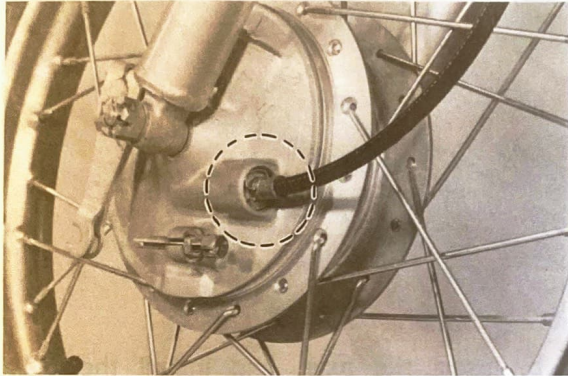
- c. Torque the axle nut to specification.

Tightening torque:
6.0 m·kg (43 ft·lb)

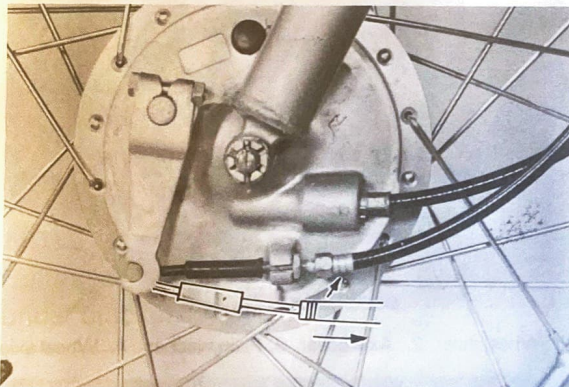
- d. Lock the nut with the cotter pin. The pin should be inserted downward, and the pin ends should be bent.



6. Connect the speedometer cable to the front wheel hub gear unit. Insert the cable end into the gear unit and fit the circlip in the groove on the wheel hub side, and lock the cable. (The circlip is already attached to the cable.)



7. Connect the front brake cable to the brake shoe plate.



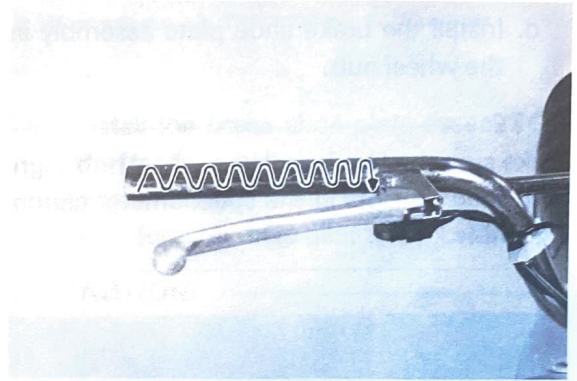
8. Remove the hexagon bolt from the bottom of the headlight body. Then remove the headlight unit assembly.



9. Grease the right end of the handlebar and the throttle grip housing, and install the throttle grip.

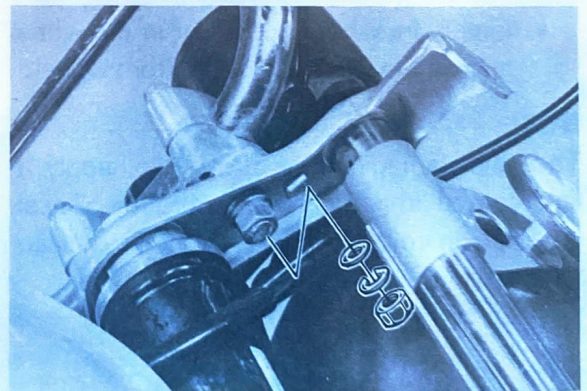
CAUTION:

Make certain throttle grip rotates on the handlebar freely, without binding. If not, normal throttle return will be impaired.

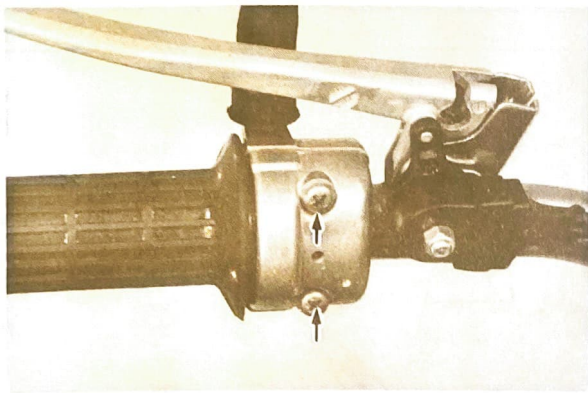


10. Install the handlebar assembly and the speedometer assembly to the handle crown using plain washers, spring washers and nuts.

Tightening torque: 3.0 m·kg (22 ft·lb)

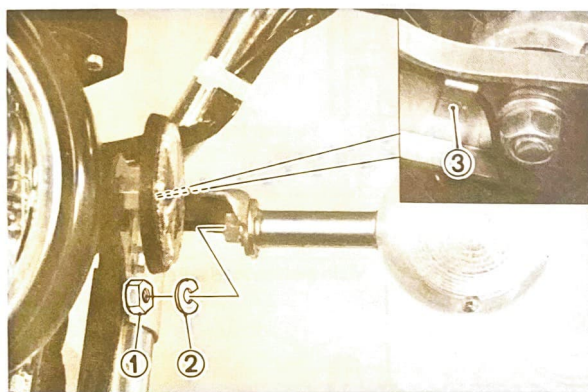


11. Slip the throttle grip over the handlebar to the limit and slide it back about 5mm (0.2 in) and assemble the throttle housing using the screws provided.



12. Front flasher light installation.

- a. Install the flasher light bracket with 8mm nuts and spring washers.



1. Nut 2. Spring washer 3. Clamp

- b. Bring the flasher light lead wire into the headlight body through the clamp (behind the front fork).

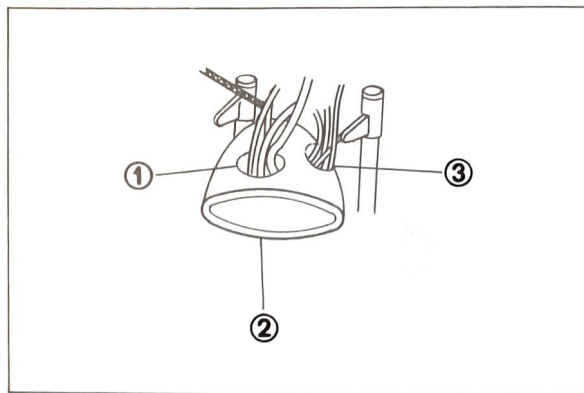
13. Connect all lead wires inside the headlight body. The wires of identical colors should be connected.

NOTE:

Right flasher light lead wire → Dark green
 Left flasher light lead wire → Dark brown



For detailed wire connections, refer to "WIRING DIAGRAM".

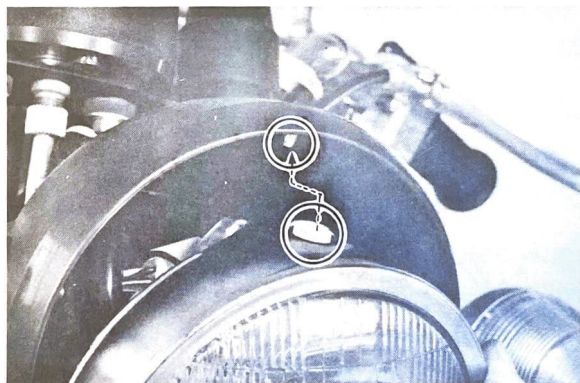


- | | |
|----------------------------|-------------------------|
| 1. Brake switch lead wire | 3. Wireharness |
| Speedometer lead wire | Main switch lead wire |
| Handlebar switch lead wire | Horn lead wire |
| Flasher light lead wire | Flasher light lead wire |
| 2. Headlight body | |

14. When installing the headlight lens assembly, care should be used so that wires are not pinched.

NOTE:

Fit the hole in the headlight unit assembly, over the projection of the headlight body.

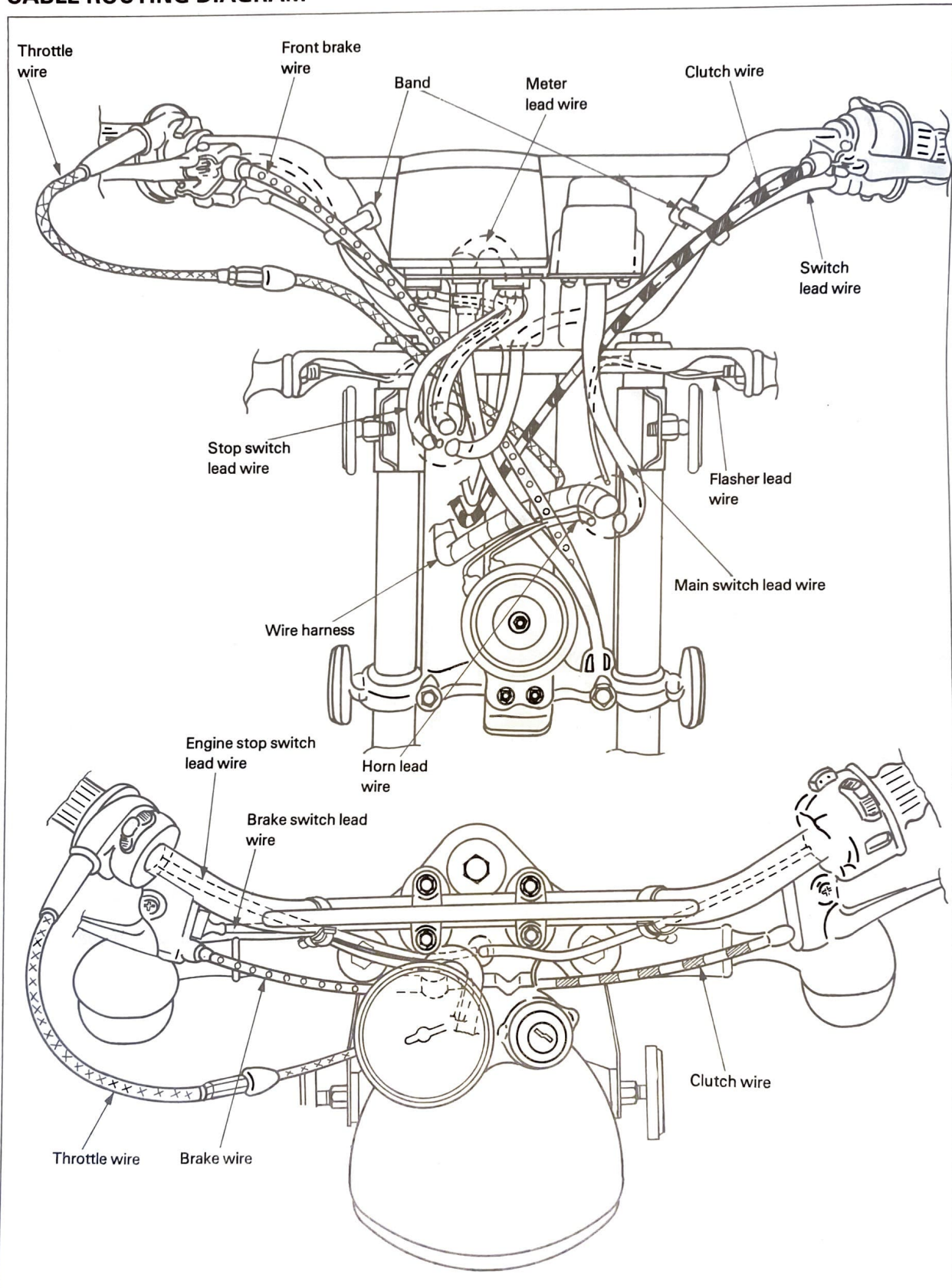


Secure the headlight assembly in place with the bolt.

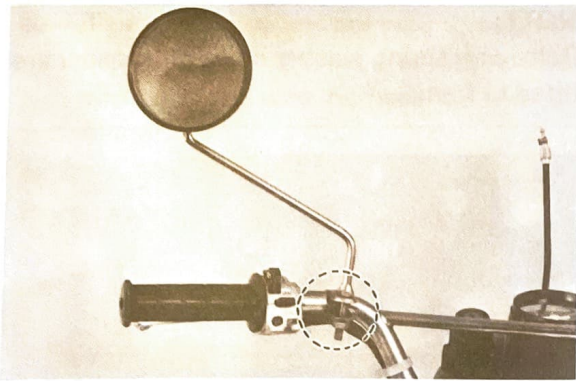
Tightening torque:
 0.5 m·kg (3.5 ft·lb)

15. Install the rear view mirror on the handlebar (lefthand side), and tighten the locknut.

CABLE ROUTING DIAGRAM



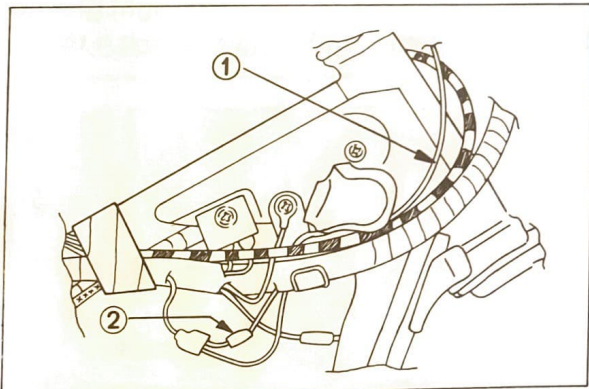
WARNING:
 Proper cable and wire routing is essential to insure safe vehicle operation.



16. Connect the engine stop switch lead wire (coming from the engine stop switch) to the lead wire (black/white) coming from the magneto in the connector.

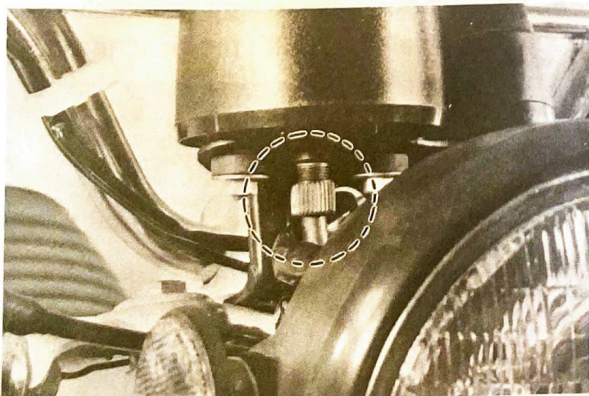
NOTE:

Before connecting the engine stop switch cord wire, fuel tank should be removed.

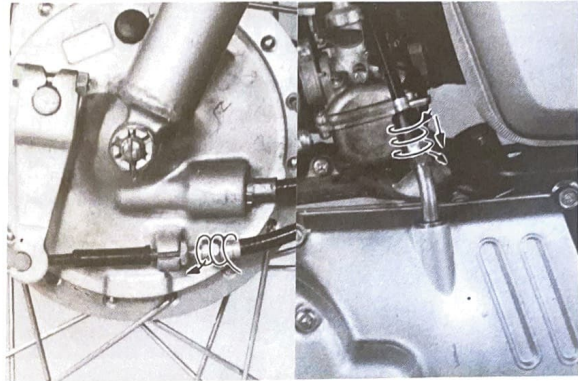


1. Engine stop switch lead wire 2. Connector

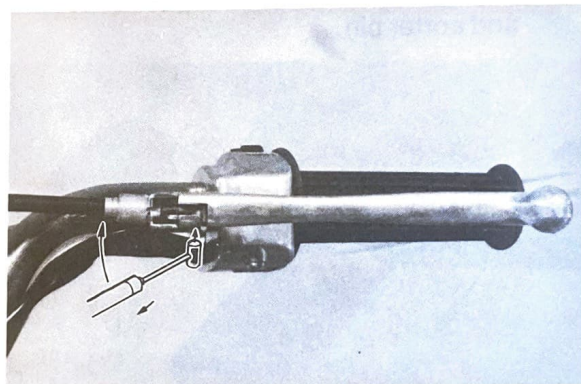
17. Connect the speedometer cable to the speedometer joint. Insert the cable end into the gear unit, turn the holding nut, and lock the cable.



18. Brake wire and clutch wire installation.
a. Full loosen the adjuster lock nut, and screw in the adjuster until tight.

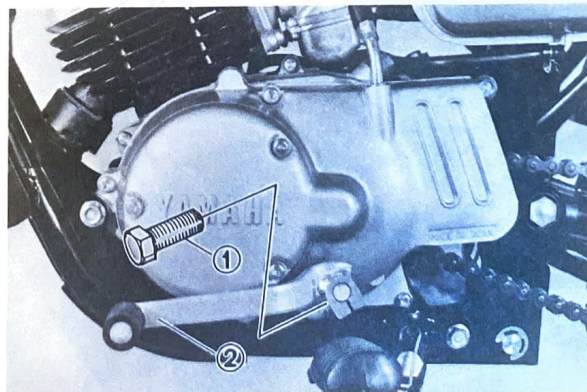


b. Insert the wire end into the lever hole, and hook the outer cable end onto lever holder.



19. Install the change pedal to the change axle and secure the change pedal using 6mm bolt.

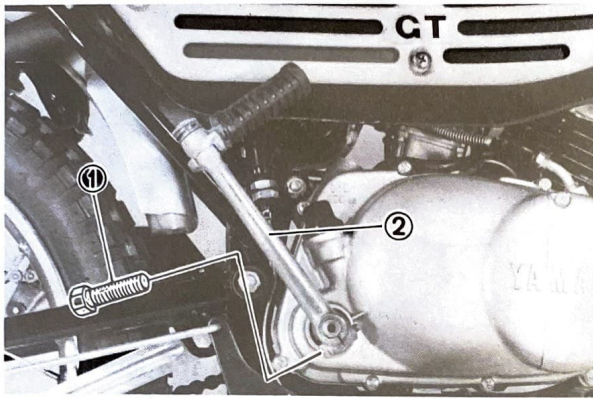
Tightening torque: 1.0 m·kg (7 ft·lb)



1. Bolt. 2. Change pedal

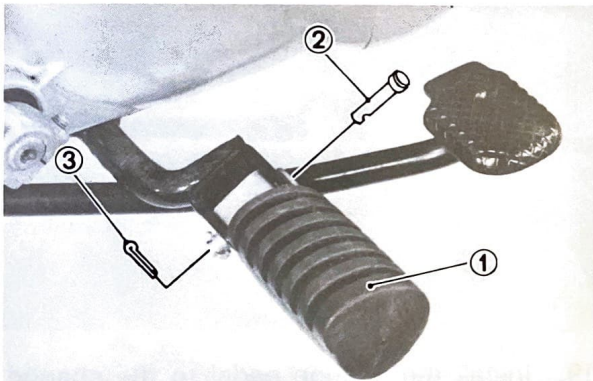
20. Install the kick crank to the kick axle and secure it using 6mm bolt.

Tightening torque: 1.0 m·kg (7 ft·lb)



1. Bolt. 2. Kick crank

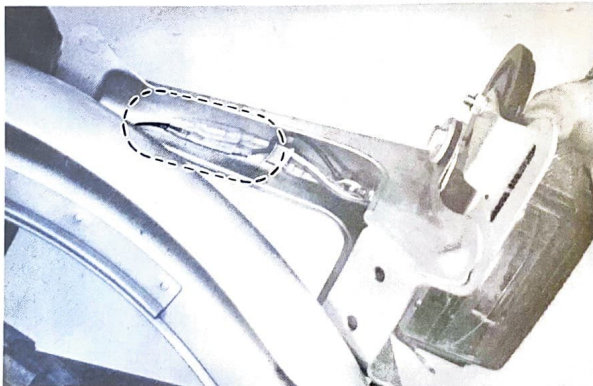
21. Install right side foot rest using clevis pin and cotter pin.



1. Foot rest 2. Clevis pin 3. Cotter pin

22. Taillight assembly installation

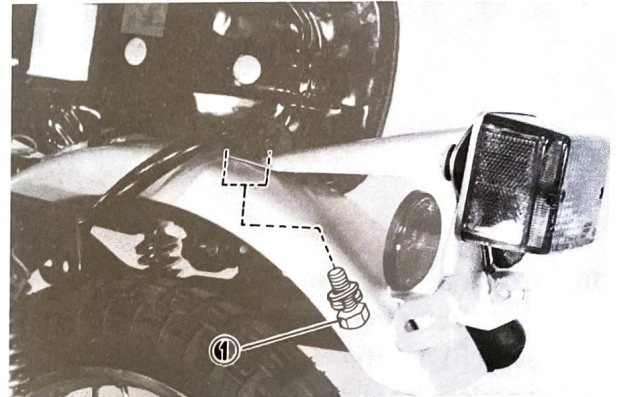
- a. Connect the taillight lead wire to the sub wire harness. (The wires of identical color should be connected.)



- b. Using the bolts with spring washer and plain washer secure the front part of tail/brake light bracket to the fender.

NOTE:

Bolts with spring washer and plain washer are fitted to frame.

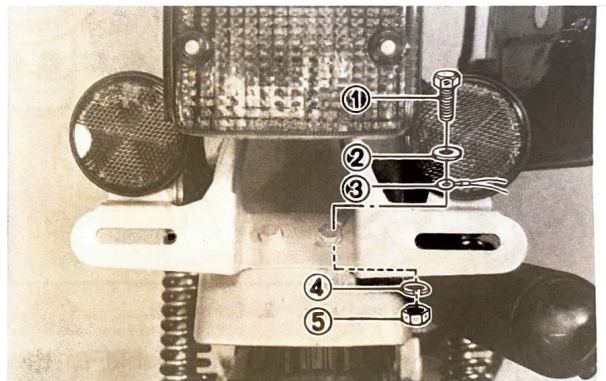


1. Bolt with spring washer and plain washer

- c. Using the bolts, spring washers and nuts secure the rear part of the tail/brakelight bracket to the fender.

NOTE:

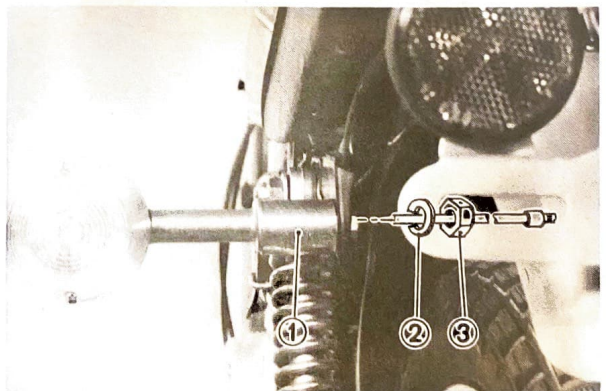
In this time, install the Tail/brakelight ground lead wire together with right side bolt.



1. Bolt 2. Plain washer 3. Ground lead wire
4. Spring washer 5. Nut

23. Rear flasher light installation

- a. Install both flasher light assembly and collar by aligning with the locating pin.

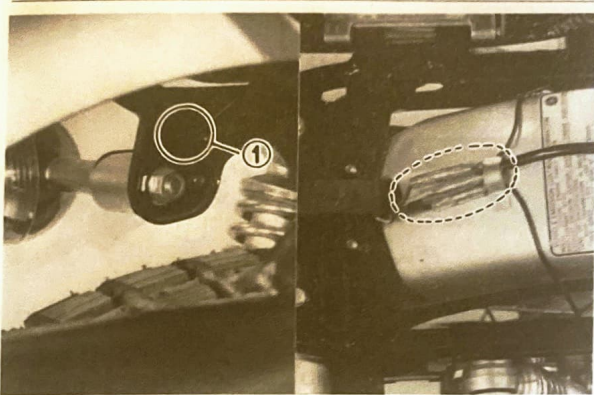


1. Flasher collar 2. Spring washer 3. Nut

- b. Thread the flasher lead wire through the clamp, then connect the flasher lead wires to the wire harness on the rear fender.

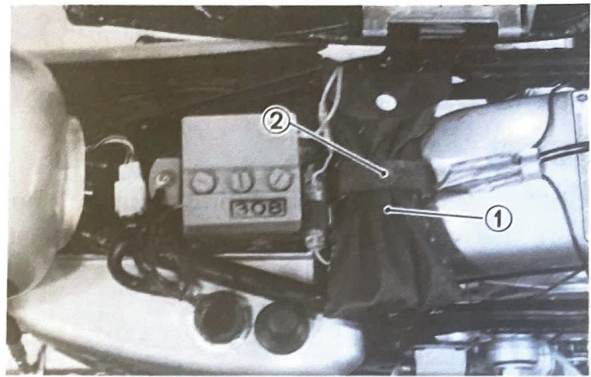
NOTE:

- Right flasher light lead wire
→ Dark green
- Left flasher light lead wire
→ Dark brown



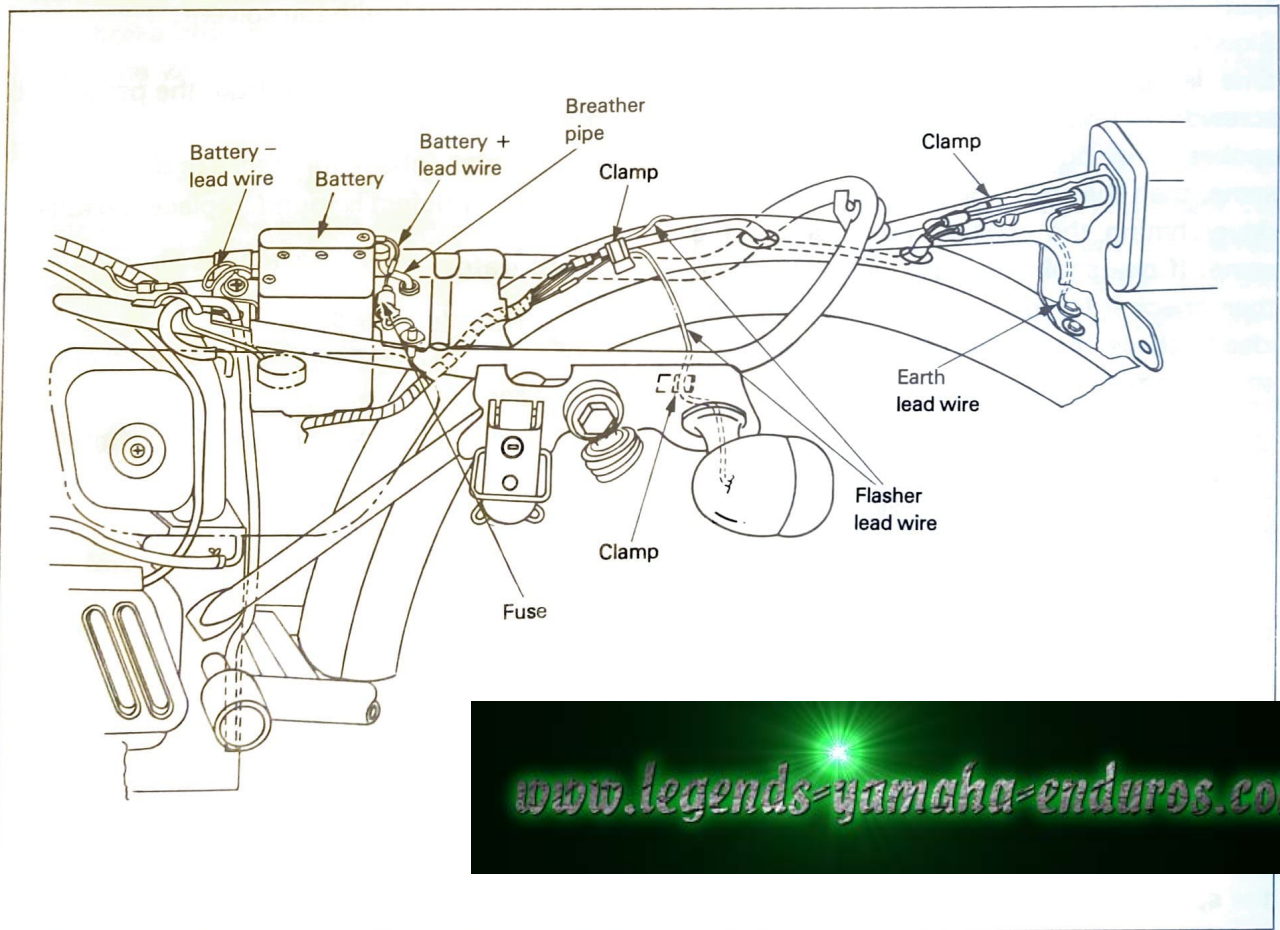
1. Clamp

24. Install the tool kit on the fender with the tool band.



1. Tool kit 2. Tool band

CABLE ROUTING DIAGRAM



ADJUSTMENT . . . PRE DELIVERY SERVICE

The following adjustment must be made before delivery of the motorcycle to a customer. Use the checklist to mark off each operation when it is complete.

Pads of checklist (sets of 50) are available at no charge from YPDI P/N LIT-11161-00-78.

Tires

Check tires for damage during shipping. Be sure there is no oil or other slipping material on the tires.

Check tire pressure:

Front	1.5 kg/cm ²	OFF road riding
Rear	2.0 kg/cm ²	
Front	1.5 kg/cm ²	ON road riding
Rear	2.3 kg/cm ²	

Checking for Loose Spokes

Loose spokes can be checked by bracing the machine off the ground so that the wheel can spin freely.

Slowly revolve the wheel and at the same time let the metal shaft of a fairly heavy screwdriver bounce off each spoke. If all the spokes are tightened approximately the same, then the sound given off by the screwdriver hitting the spokes should sound the same. If one spoke makes a dull flat sound, then check it for looseness. It is also a good idea to check all spokes with a spoke wrench, so that they can be tightened immediately.

Checking Rim "Run-Out"

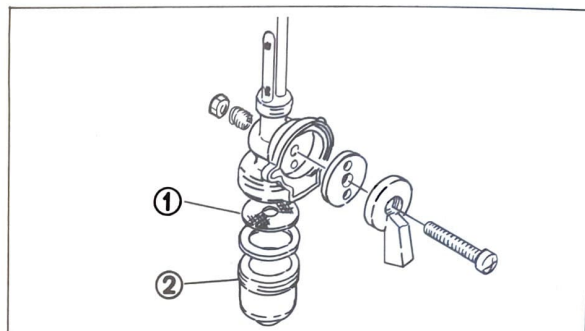
While you have the wheel elevated, you should check that it does not have too much run-out. "Run-out" is the amount the wheel deviates from a straight line as it spins. Spin the wheel, and solidly anchor some sort of a pointer about 3mm away from the side of the rim.

As the wheel spins, the distance between the pointer and the rim should not change more than 2mm total. Any greater fluctuation should be eliminated by properly adjusting the spokes.

Run-out limits: 2mm lateral
Run-out limits: 2mm vertical

Fuel petcock and hose

1. Clean the petcock interior
 - a. Turn the fuel petcock to "OFF" position, and remove both filter cup and screen.
 - b. Clean the filter cup and screen with a solvent.



1. Filter screen 2. Filter cup

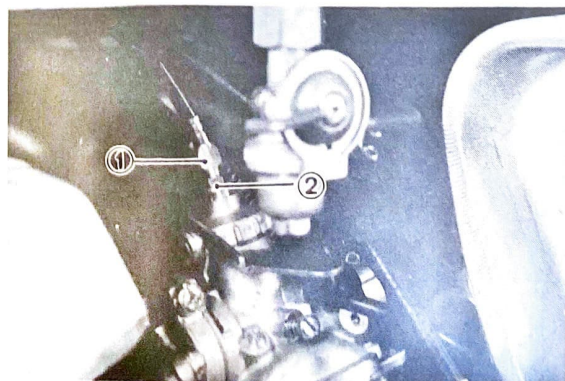
- c. Re-install the cup and screen.
 - d. If dust collects or rust develops excessively in the filter cup, clean the inside of the tank with the solvent.
2. Fuel hose
 - a. Visually check for cracks or damage.
 - b. If any defect is found, replace the hose.

Carburetor

1. Throttle cable 2.

Loosen cable adjuster lock nut (at top of carburetor) and turn cable adjuster until specified free play is obtained. Retighten lock nut.

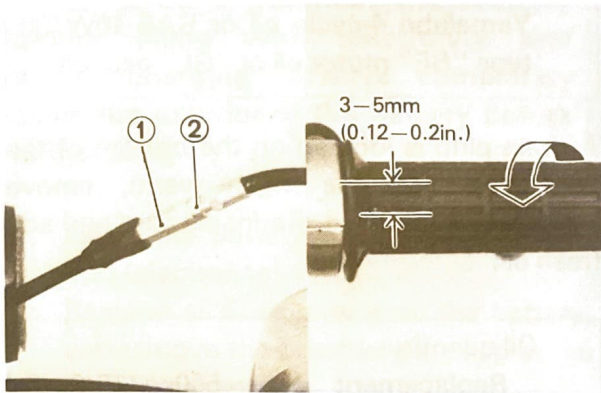
1.0mm—2.0mm (0.04 in—0.08 in)



1. Adjuster 2. Lock nut

2. Throttle cable 1

After engine idle speed and throttle cable 2. are set, check play in turning direction of throttle grip. The play should be 3 – 5mm (0.12–0.20 in) at grip flange. Loosen the lock nut and turn the wire adjuster to make the necessary adjustment. After adjusting, be sure to tighten the lock nut properly.

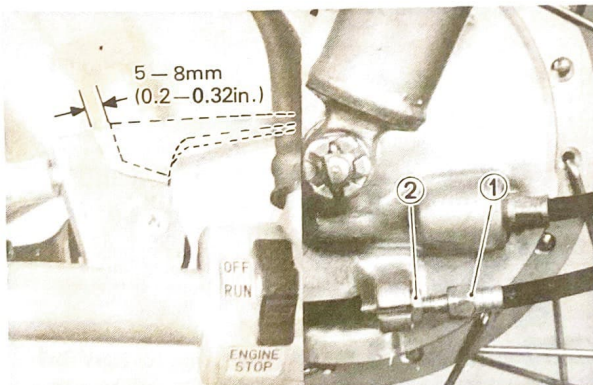


1. Adjuster 2. Lock nut

Front brake adjustment

Front brake should be adjusted to suit rider preference with a minimum cable slack of 5 – 8mm (0.2 – 0.32 in) play at the brake lever pivot point.

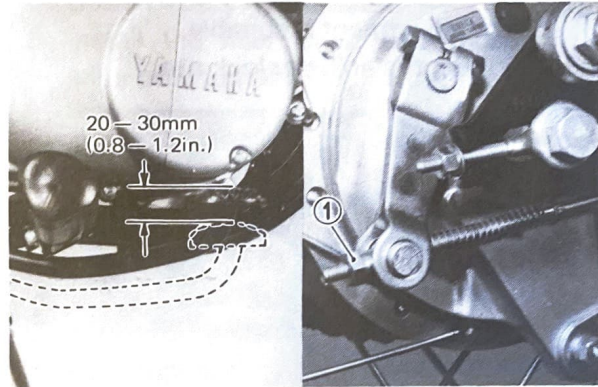
1. Loosen the adjuster lock nut.
2. Turn the cable length adjuster in or out until adjustment is suitable.
3. Tighten the adjuster lock nut.



1. Adjuster 2. Lock nut

Rear brake adjustment

The rear brake should be adjusted so the end of the brake pedal moves 20 – 30mm (0.8 – 1.2 in). To adjust, turn the adjuster on the brake rod clockwise to reduce play; turn the adjuster counterclockwise to increase play.



1. Adjuster

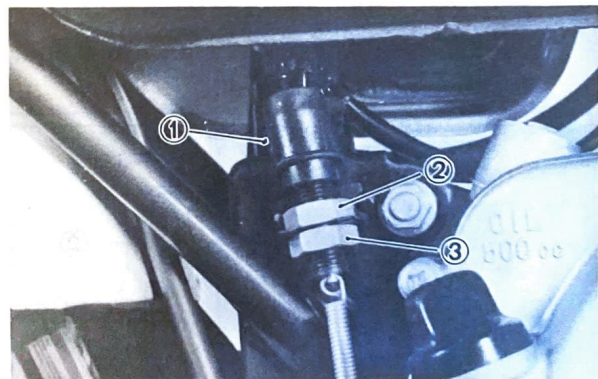
CAUTION:

Always check whether or not the brakelight operates correctly after rear brake adjustment.

Check the brakes at low speed shortly after starting out.

Brakelight switch adjustment

To adjust, loosen the lock nut and rotate the adjusting nut. Proper adjustment is achieved when the brake starts to take effect and the brakelight illuminates simultaneously. After adjusting, tighten the lock nut.

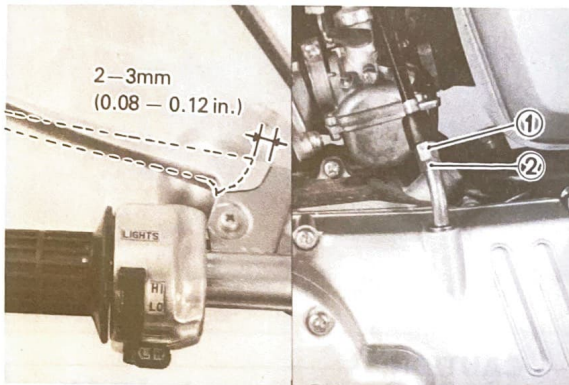


1. Brakelight switch 2. Adjusting nut 3. Lock nut

Clutch adjustment

Clutch should be adjusted to suit rider preference with a minimum cable slack of 2-3mm (0.08 – 0.12 in) play at the clutch lever pivot point.

1. Loosen the adjuster lock nut.
2. Turn the cable length adjuster in or out until adjustment is suitable.
3. Tighten the adjuster lock nut.



1. Adjuster 2. Lock nut

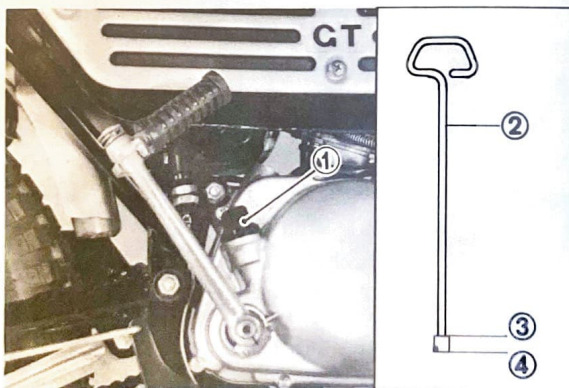
Engine and Transmission oil

1. Engine oil

We recommend the Yamalube 2-cycle oil. If for any reason you should use another type, use a 2-cycle engine oil labeled "BIA certified for service TC-W".

2. Transmission oil

To check level, start the engine and let it run for several minutes to warm and distribute oil. With the engine stopped, remove the oil filler cap. Set the dip stick on the case threads in a level position. Remove and check level.



1. Oil filler cap 2. Dip stick
3. Maximum level 4. Minimum level

NOTE:

Be sure the machine is level and on both wheels

The stick has Minimum and Maximum marks. The oil level should be between the two. Top up as required.

Recommended oil:

Yamalube 4-cycle oil or SAE 10W/30 type "SE" motor oil or "GL" gear oil

A drain plug is located on the bottom of the crankcase. With the engine warm, remove the plug and drain oil. Re-install plug and add fresh oil.

Oil quantity:

Replacement	550cc (18.6 oz)
Overhauling	600cc (20.3 oz)



1. Drain plug

Drain plug tightening torque:
2 m·kg (14 ft·lb)

CAUTION:

Under no circumstances should any additives be included with the transmission oil. This oil also lubricates and cools the clutch. Additives may cause clutch slippage.

Battery

1. Remove the battery from the battery box.

CAUTION:

Never try to add battery electrolyte (battery acid) to a battery that is installed on a machine. Even a skilled mechanic will spill enough acid to damage metal parts. Always remove the battery before filling with electrolyte and during charging. Always completely clean the exterior of the battery before re-installing.

2. Filling the battery with diluted sulfuric acid (electrolyte)
 - a. Remove all filler caps from the battery, and remove the breather pipe cap at the same time.
 - b. Cool the electrolyte down to below 30°C (80°F).

Battery type	6V, 4AH
Electrolyte	Specific gravity 1.26
Initial charging current	0.25 Amperes/ 15 hours (New battery)
Re-charging current	0.4 Amperes/ 10 hours (or until specific gravity reaches 1.26)
Re-fill fluid	Distilled water to maximum level line
Re-fill period	Check once per month or more often as required

- c. Pour acid into each cell little by little up to the upper level line, and leave it for a while. When the battery fluid permeates the plates and separators, the fluid level begins to lower. Add electrolyte again.
3. The battery must be charged as much as possible before using for the first time. This initial charge will prolong the life of the battery.

Charging current: 0.25A
Charging hours: 15hrs

Electrolyte Specific Gravity

Specific gravity at 20°C (68°F): 1.26

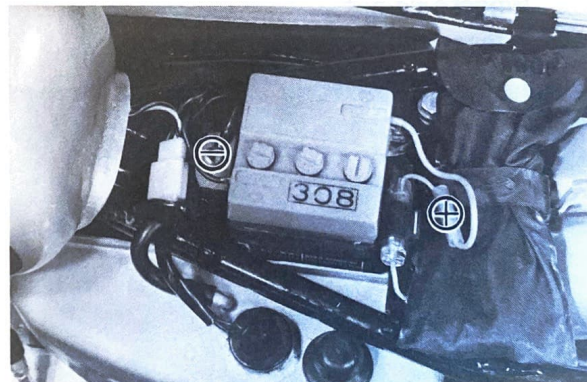
- a. Charge the battery as required and measure the specific gravity of the fluid. Use a battery hydrometer.
- b. Install the filler caps, and thoroughly wipe off the fluid around the filler caps. Wipe off the battery completely before installation.

Battery installation

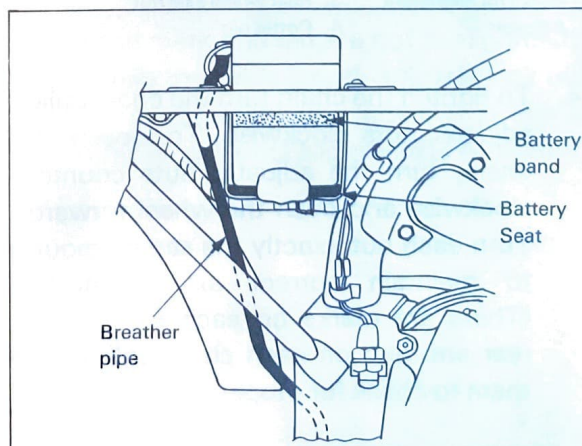
- 1 Make sure the main switch is turned off, and install the battery in the battery box. Connect the positive lead wire first, and then connect the negative lead wire.

CAUTION:

Make sure battery leads are connected properly. Reversing leads can seriously damage the electrical system.

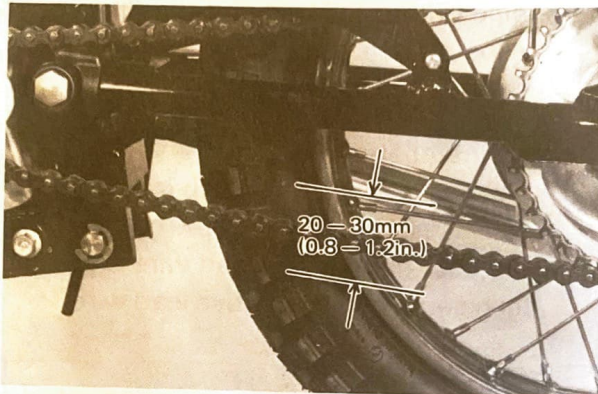


2. The breather pipe should be connected as illustrated.



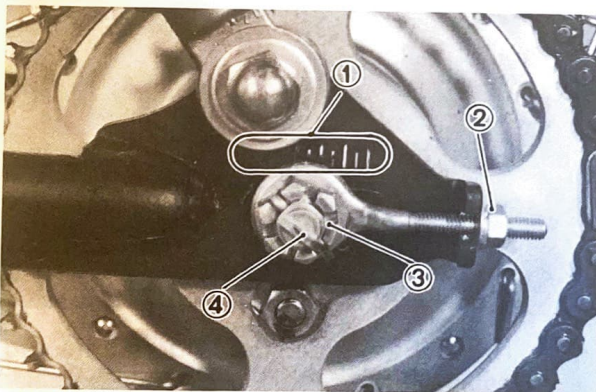
Drive chain tension check

Inspect the drive chain with both tires touching the ground. Check the tension at the position shown in the illustration. The normal vertical deflection is approximately 20–30mm. (0.8 – 1.2 in.). If the deflection exceeds 30mm. (1.2 in.) adjust the chain tension.



Drive chain tension adjustment

1. Loosen the rear brake rod adjuster.
2. Remove the cotter pin from the rear wheel axle nut.
3. Loosen the rear wheel axle nut.



- | | |
|------------------------|------------------------|
| 1. Marks for alignment | 3. Rear wheel axle nut |
| 2. Adjuster | 4. Cotter pin |

4. To tighten the chain turn the chain puller adjuster nuts clockwise. To loosen the chain, turn the adjuster nuts counter-clockwise and push the wheel forward. Turn each nut exactly the same amount to maintain correct axle alignment (There are marks on each side of the rear arm and on each chain puller; use them to check for proper alignment).

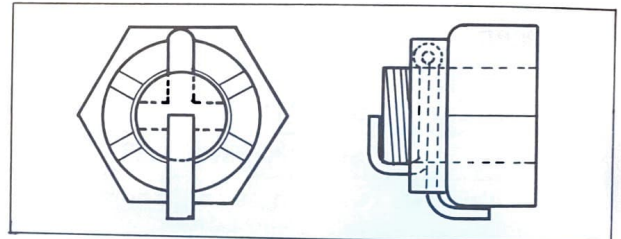
NOTE:

Before adjusting, rotate the rear wheel through several revolutions and check tension several times to find the tightest point. Adjust the chain tension with the rear wheel in this "tight chain" position.

5. After adjusting the chain, be sure to tighten the rear wheel axle nut.

Tightening torque:
6.0 m·kg (43 ft·lb)

6. Then tighten the adjuster nuts against the rear arm an extra 1/4 turn each.
7. Insert the cotter pin into the rear wheel axle nut and bend the cotter pin end as shown in the illustration (if the nut notch and the cotter pin hole do not match, tighten the nut slightly to match).



8. In the final step, adjust the play in the brake pedal.

CAUTION:

Do not over-tighten the chain. Excessive chain tension will overload the engine and other vital parts; keep the tension within the specified limits. Also, replace the rear axle cotter pin with a new one.

Drive chain lubrication

Apply lubricant between roller and side plates on both inside and outside of chain.

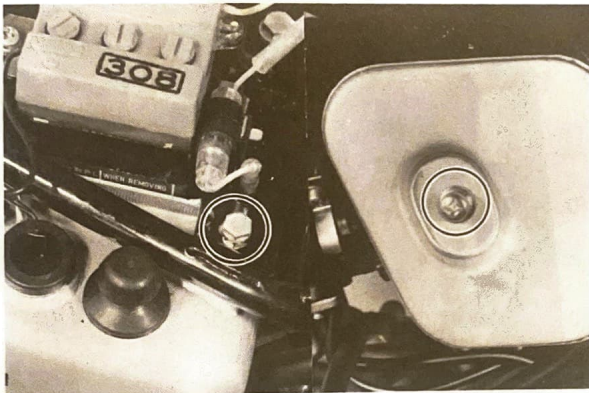
Don't skip a portion as this will cause uneven wear.

Apply thoroughly. Wipe off excess.

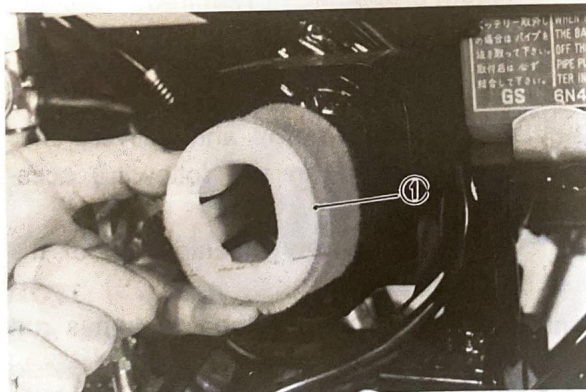
Recommended lubricant:
Yamaha Chain and Cable Lube or
SAE 10W/30 motor oil

Air filter

1. Remove the oil tank mounting bolt and then tank. Remove the oil caution switch assembly.



2. Remove the air filter case cap fitting screw and cap. Remove the air filter element.



1. Air filter element

3. Check the air filter element for fouling. If dirty, wash and dampen it with oil in the following manner.
 - a. Wash the air filter element in a solvent.
 - b. After drying it, apply a small quantity of oil.

Recommended oil:

Yamalube 2-cycle oil or SAE 20W
motor oil.

- c. Wrap the element with a clean cloth, and squeeze excess oil out.

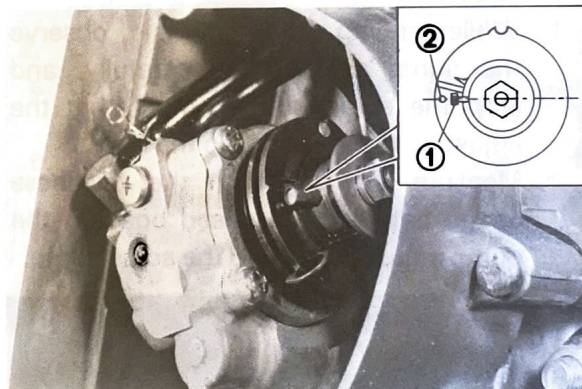
NOTE:

Do not twist the element.

- d. Install the element, and install all removed parts.

Autolube pump

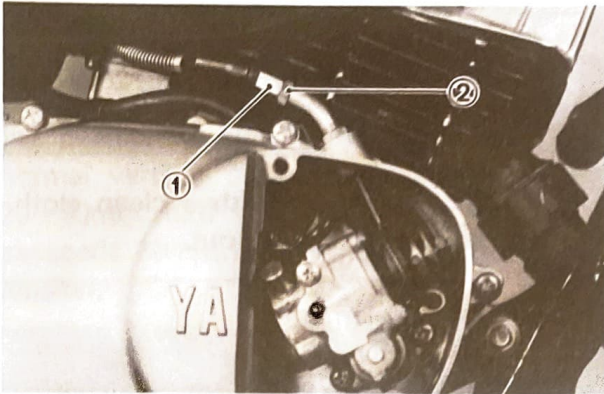
1. Cable adjustment
 - a. Remove autolube pump cover, which is located on forward portion of the right-hand crankcase cover.
 - b. Rotate throttle slightly until all slack is removed from all cables. Hold this position.
 - c. Check to see that the Autolube pump plunger pin is aligned with the mark on the Autolube pump pulley.



1. Plunger 2. Mark

- d. If the mark and pin are not in alignment, loosen the cable length adjuster lock nut on top of crankcase cover and adjust cable length until alignment is achieved.

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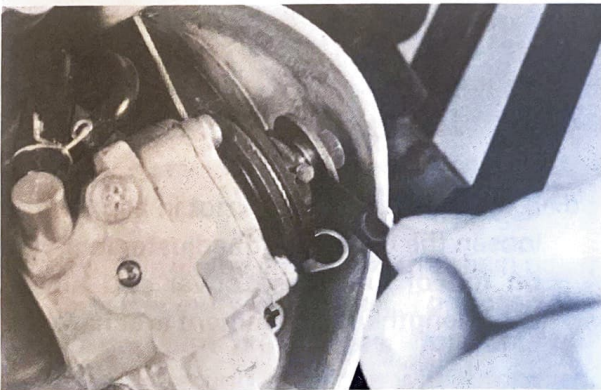
1. Adjuster 2. Lock nut

e. Tighten adjuster lock nut.

2. Pump stroke adjustment

Normally the checking and adjustment of the pump stroke are not required, but if any sign of trouble resulting from an incorrect minimum pump stroke is noticed (e.g., excessive engine oil consumption or engine seizure), proceed as follows:

- a. Remove the pump cover and start the engine.
- b. While running the engine idle, observe the pump adjust plate carefully, and stop the engine the moment that the adjust plate moves out to the limit.
- c. Measure the gap with the thickness gauge between the raised boss on the pump adjust pulley and the adjust plate.



- d. Repeat steps b. and c. above a few times. When the gap measured is the largest, the pump stroke is considered to be at a minimum.

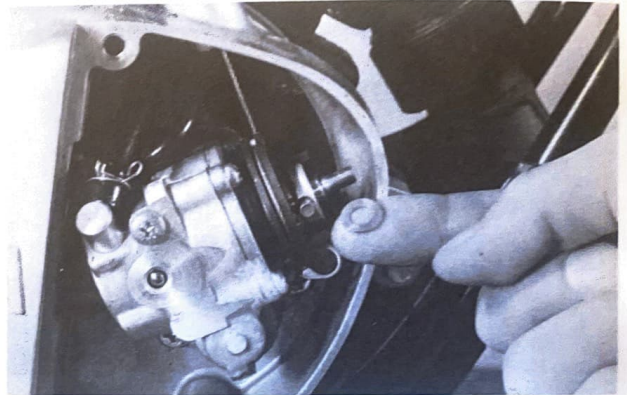
NOTE:

When inserting the thickness gauge between the adjusting plate and the adjusting pulley, be careful so that neither the plate nor the pulley is moved. In other words, do not force the thickness gauge into the gap.

Minimum pump stroke:

0.18—0.27mm (0.007—0.011 in)

- e. If clearance is not correct, remove the adjust plate lock nut and the adjust plate.
- f. Remove or add an adjusting shim as required.

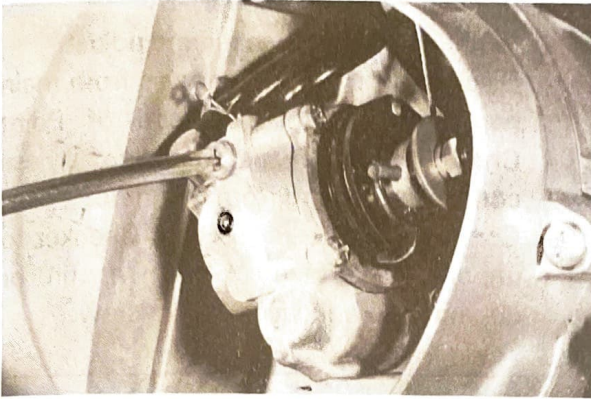


- g. Reinstall adjust plate and lock nut. Tighten the lock nut. Re-measure gap. Repeat procedure as required.

3. Air bleeding

The Autolube pump and delivery lines must be bled on the following occasions:

- Setting up a new machine out of the crate.
 - Whenever the Autolube tank has run dry.
 - Whenever any portion of the Autolube system is disconnected.
- a. Bleeding the pump case and/or oil pipe
 - 1) Remove the pump cover and remove the bleed screw.

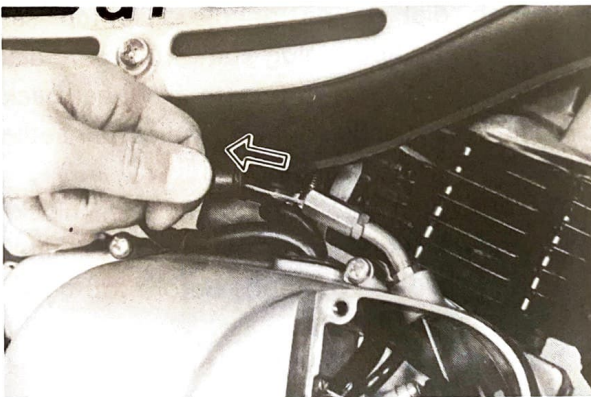


- 2) Keep the oil running out until air bubbles disappear.
- 3) When all air bubbles are expelled completely, tighten the bleed screw and install the pump cover.

NOTE: _____

Check the bleed screw gasket, and if damaged, replace with a new one.

- b. Bleeding the pump distributor and/or delivery pipe
 - 1) Start the engine.
 - 2) Pull the pump wire all the way out to set the pump stroke to maximum.



NOTE: _____

It is difficult to bleed the distributor completely with the pump stroke at minimum stroke, and therefore the pump stroke should be set to maximum stroke.

- 3) Keep the engine running at about 2,000 rpm for two minutes or so, and both distributor and delivery pipe can be completely bled.

Spark plug

1. Check electrode condition, insulator color and plug gap.
2. Use a wire gauge for adjusting the plug gap.
3. When installing the plug, always clean the gasket surface, wipe off any grime that might be present on the surface of the plug, and torque the spark plug properly.

Standard spark plug: B-7HS (NGK)

Plug gap:

0.5—0.7 mm (0.020-0.028 in)

Plug tightening torque:

2.5 m·kg (18 ft·lb)

Contact breaker

1. Checking
Visually check the contact breaker point surfaces for protuberance, burning, oil or dust. If necessary, clean surfaces.
2. Cleaning
 - a. Using a point file or sandpaper, smooth out the surfaces.
 - b. Place a white business card (or paper of bond texture) between the points, and by pulling it repeatedly, thoroughly remove the metal dust and/or oil. (For easy operation, the white business card may be damped with a lacquer thinner or point cleaner.)

Point gap:

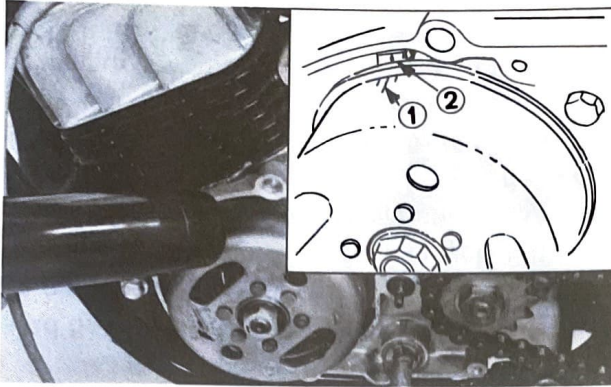
Normal: 0.35 mm (0.014 in)

Minimum: 0.30 mm (0.012 in)

Maximum: 0.40 mm (0.016 in)

Ignition timing

1. Checking
Ignition timing is checked with a timing light by observing the position of the stationary mark stamped on the crankcase and the pointers on the magneto flywheel.

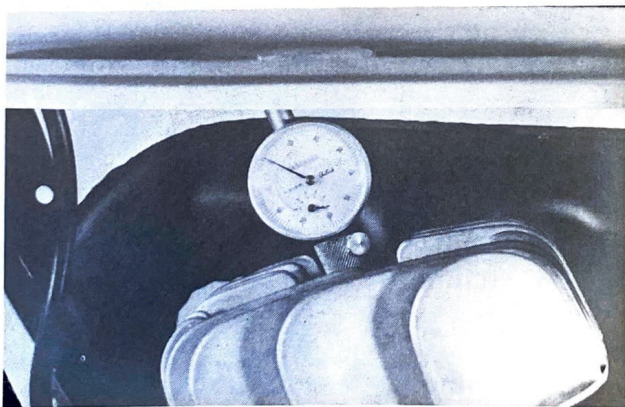


1. Pointers 2. Stationary mark

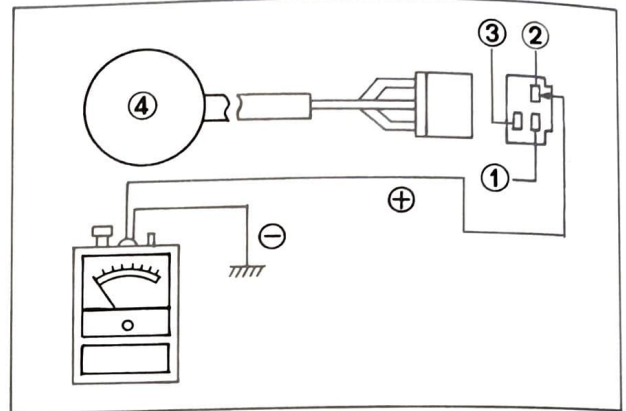
- a. Connect timing light to spark plug lead wire.
- b. Start the engine and engine speed as specified.

Specified speed = 1,250 – 1,400 r/min.

- c. The center pointer of the magneto flywheel should line up the stationary mark on the crankcase at a specified engine speed.
2. If the marks are out of alignment, proceed as follows;
 - a. Remove spark plug and screw dial gauge stand into spark plug hole.
 - b. Insert dial gauge into stand.



- c. Remove generator cover.
- d. Switch on point checker and adjust. Disconnect magneto harness from main harness. Connect red lead of Point Checker to black wire pin in wire harness connector coming from magneto.
- e. Connect black lead of Point Checker to unpainted surface of cylinder fin or unpainted crankcase bolt or screw.



1. Blue 3. Green/Red
2. Black 4. Flywheel magneto

- f. Rotate magneto flywheel until piston is at top-dead-center (T.D.C.). Set the zero on dial gauge face to line up exactly with dial gauge needle. Tighten set screw on spark plug stand to secure dial gauge assembly. Rotate flywheel back and forth to be sure that indicator needle does not go past zero.
- g. Starting at T.D.C. rotate flywheel clockwise until dial gauge reads approximately 3 needle revolutions before-top-dead-center (B.T.D.C.).
- h. Slowly turn flywheel counterclockwise until dial gauge reads ignition advance setting listed in Specifications Table. At this time the point checker needle should swing from "CLOSED" to "OPEN" position, indicating that the ignition points have just begun to open.

Ignition timing (B.T.D.C.):
1.8 ± 0.15 mm (0.07 ± 0.006 in)



- i Repeat steps g. and h. to verify point opening position. If points do not open within specified tolerance, they must be adjusted.
- j. Adjust ignition points by slightly loosening Phillips head screw and carefully rotating contact breaker assembly with a slotted screwdriver. Make small adjustment and retighten Phillips head screw before rechecking timing. Recheck timing by repeating steps g. and h.

- k. Remove dial gauge assembly and dial gauge holder. Disconnect point checker. Reconnect magneto harness. Replace spark plug and generator cover.

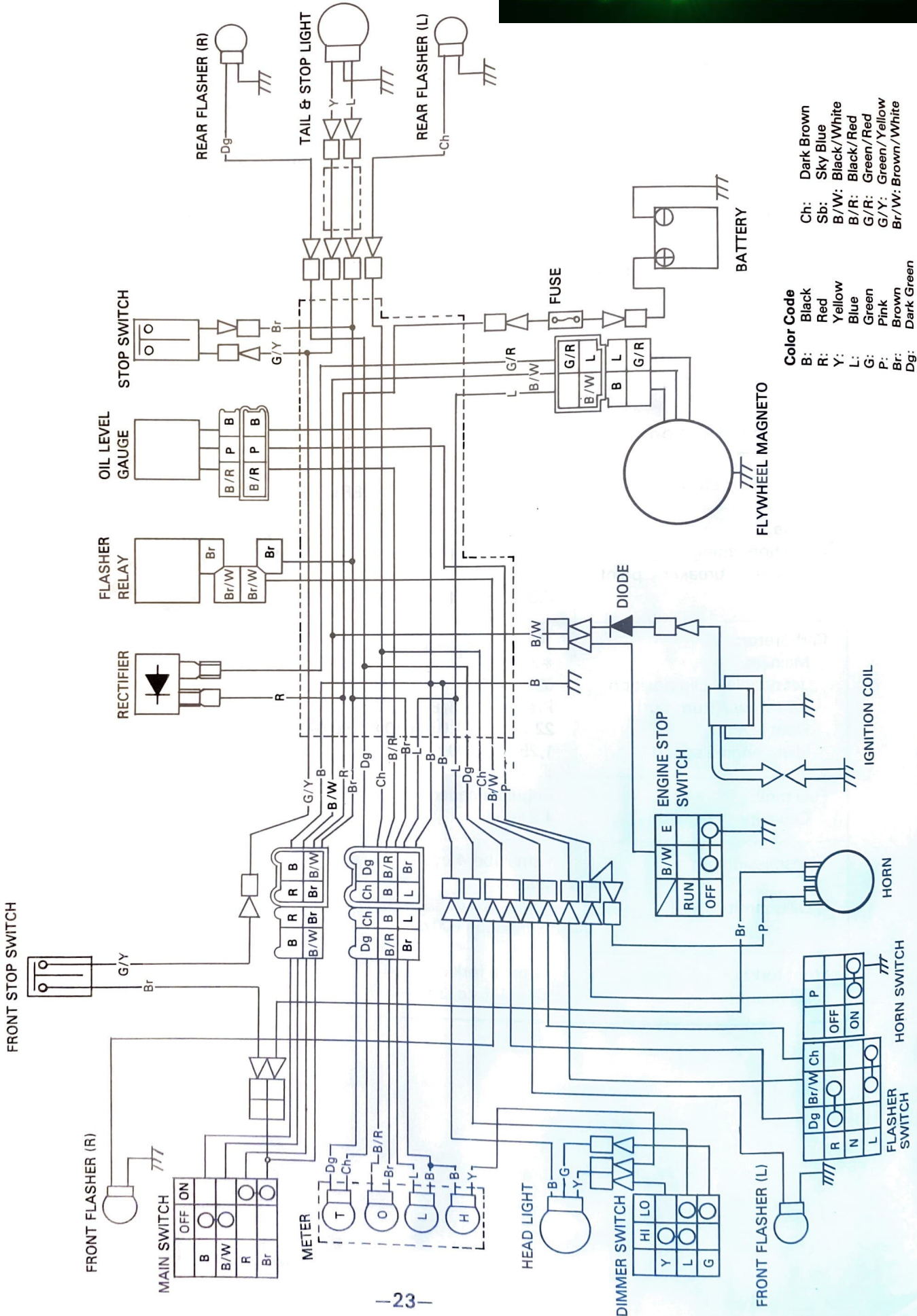
Spark plug torque: 2.5 m·kg (18 ft·lb)

Service specification

ITEM	SERVICE STANDARDS
Engine: Ignition timing Contact breaker point gap	1.8 mm ± 0.15 mm (0.07 ± 0.006 in) 0.3 mm – 0.4 mm (0.012 – 0.016 in)
Carburetor: Main jet Jet needle / clip position Air screw / (turn out) Float level Idling engine speed	#88 032–2/5 Pre-set (1–5/8) 22.0 mm ± 1.0 mm (0.87 ± 0.04 in) 1,250–1,400 r/min
Fuel tank: Capacity	Regular (leaded) 4.8 lit
Transmission oil: Oil quantity	Yamalube 4-cycle oil or SAE 10W/30 type "SE" motor oil or "GL" gear oil Total: 550 cc Exchange: 600 cc
Front fork: Oil quantity	Yamaha fork oil 10 wt 108–116 cc (3.65–3.92 oz)



GT80E WIRING DIAGRAM



- Color Code**
- Black
 - Red
 - Yellow
 - Blue
 - Green
 - Pink
 - Brown
 - Dark Green
- Color Code**
- Ch: Dark Brown
 - Sb: Sky Blue
 - B/W: Black/White
 - B/R: Black/Red
 - G/R: Green/Red
 - G/Y: Green/Yellow
 - Br/W: Brown/White

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