



YAMAHA

www.legends-yamaha-enduros.com

DT 250D

DT 400D

ASSEMBLY MANUAL



90894-07608

FOREWORD

This Assembly Manual contains the information required for the unpacking and assembly of Yamaha motorcycles so that the Yamaha serviceman can assemble the machine in the correct manner. To perform machine assembly, a basic knowledge of service to Yamaha machines is required. Therefore, all Yamaha dealers are urged to make a full study on the service of Yamaha motorcycles using the relevant service manuals.

NOTICE

The service specifications given in this Assembly Manual are based on the model as manufactured. The service specifications may be subject to change in the future. All Yamaha dealers will be notified of changes to specifications or service procedures, through technical service information published by Yamaha. The assembly procedure is described in the order that the mechanic should follow, and the correct service tools should be used in the correct manner. Failure to do this may result in poor performance and danger to the rider.

www.legends-yamaha-enduros.com

YAMAHA DT250D, DT400D
ASSEMBLY MANUAL
1st EDITION, MAY, 1976
OVERSEAS SERVICE DEPARTMENT
YAMAHA MOTOR CO., LTD
IWATA, JAPAN
LIT-11666-00-40

PREPARATION

Correct assembly of this machine requires the following supplies and working space:

Supplies

Oil, grease, shop rags and electrical contact cleaner.

Workshop

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

The floor should be level.

UNPACKING

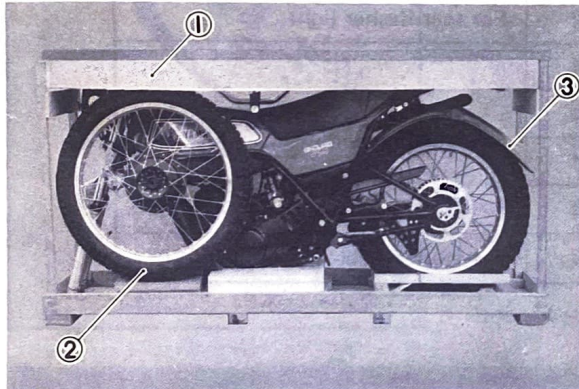
Note on transportation

Use caution when transporting the crate to service shop. Do not subject crate to heavy shock.

Procedure for unpacking

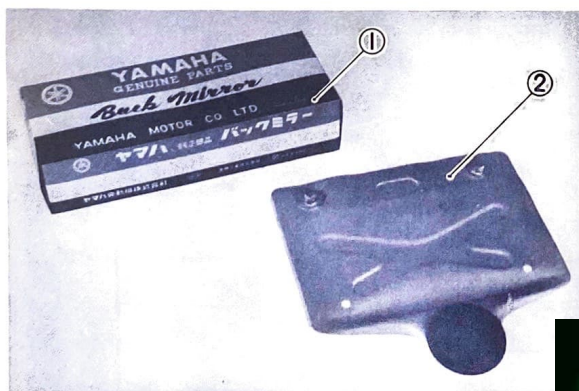
To remove the machine and parts from the crate, cut the vinyl bands around the box.

Remove the exterior carton by lifting it straight up.



1. Foam tray 2. Front wheel
3. Front fender

Remove the front fender and the foam tray. Remove the front wheel. Remove the rear view mirror and license plate support bracket.

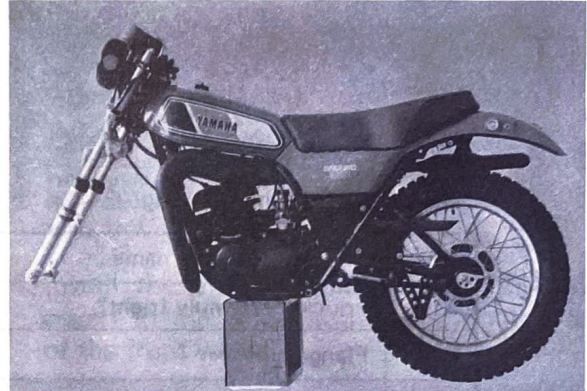


1. Rear view mirror
2. License plate support bracket

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

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

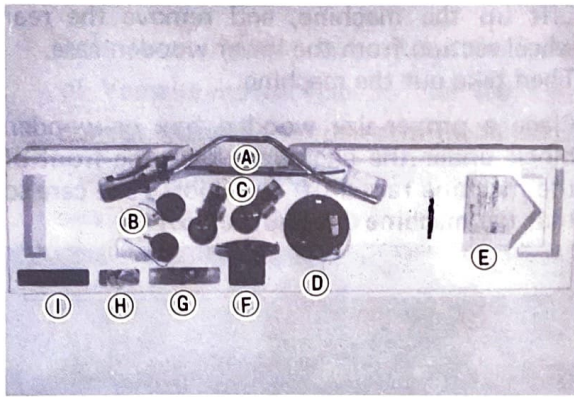
Place a proper-size wooden box or wooden block under the engine to keep the front of the machine raised off the floor. Take care so that the machine does not fall over.



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.

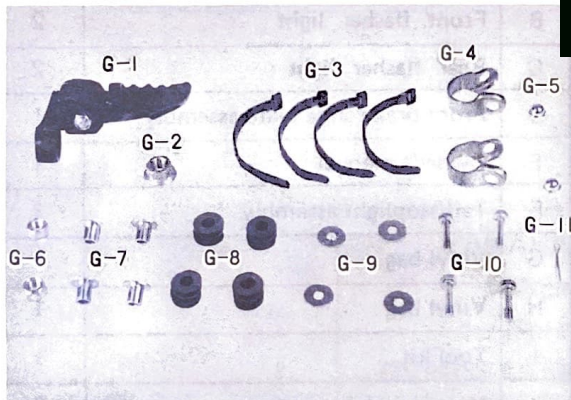
No.	Parts name	Q'ty
A	Handlebar assembly	1
B	Front flasher light	2
C	Rear flasher light	2
D	Front brake shoe plate assembly	1
E	Owner's manual	1
F	Tail/stoptlight assembly	1
G	Vinyl bag	1
H	Vinyl bag	1
I	Tool kit	1
J	Main switch key	2



Details of parts in the vinyl bag "G".

No.	Parts name	Q'ty	Remarks
G- 1	Footrest assembly (right)	1	
G- 2	Flange nut	1	For footrest
G- 3	Switch cord band	4	
G- 4	Flasher stay	2	For front flasher light
G- 5	Crown nut	2	
G- 6	Self locking nut	2	For rear flasher light
G- 7	Collar	4	For front fender
G- 8	Damper	4	
G- 9	Plate washer	4	
G-10	Bolt with spring washer	4	
G-11	Cotter pin	1	For front wheel

www.legends-yamaha-enduros.com



Details of parts in the vinyl bag "H".

No.	Parts name	Q'ty	Remarks
H - 1	Handle upper holder	2	For handlebar
H - 2	Bolt	4	
H - 3	Spring washer	4	
H - 4	Distance collar (with hub dust cover)	1	For front wheel

SET-UP PROCEDURES

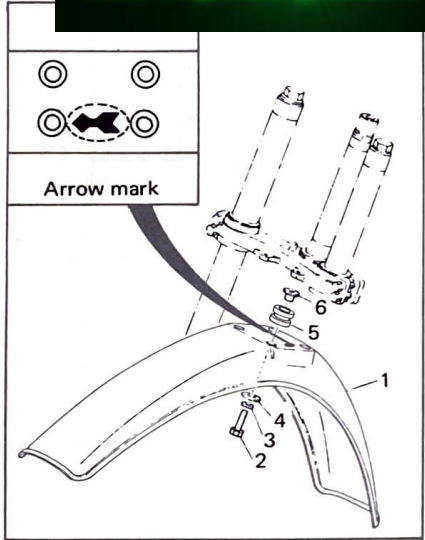
Front fender and front wheel installation

1. Insert the front fender between the front forks, and secure the front fender using bolts, spring washers, plate washers, dampers and collars. (See Illustration)

Tightening torque:
0.35 – 0.55 m·kg
(30 – 48 in·lb)

NOTE: _____

The front fender should be installed with the arrow mark in the center facing forward.

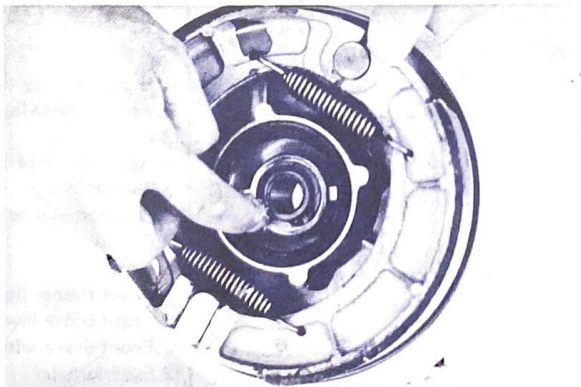


1. Front fender
2. Bolt
3. Spring washer
4. Plain washer
5. Damper
6. Fender collar

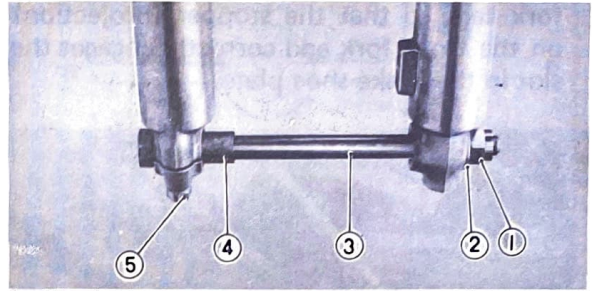
2. Apply a light coat of grease to the speedometer drive gear and oil seal.

CAUTION: _____

Take care not to put grease on the brake linings or inner surface of the brake drum. If you do so, clean using a rag dampened with a solvent. Foreign material on braking surface can cause impaired braking action.



3. Remove the front wheel axle nut and plain washer, and loosen the nuts securing the axle holder. Then remove the wheel axle and wheel axle collar.



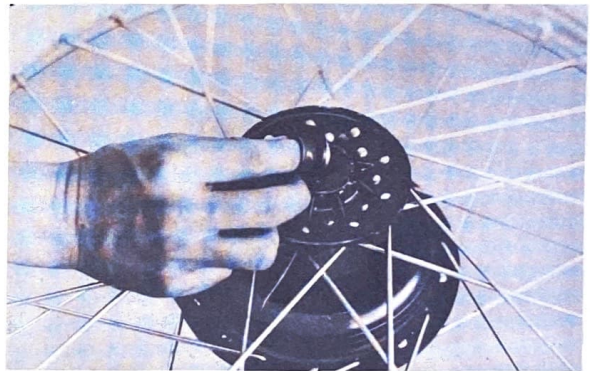
1. Wheel axle nut
2. Plain washer
3. wheel axle
4. wheel axle collar
5. Axle holder nut

4. Install the distance collar (with hub dust cover) 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.

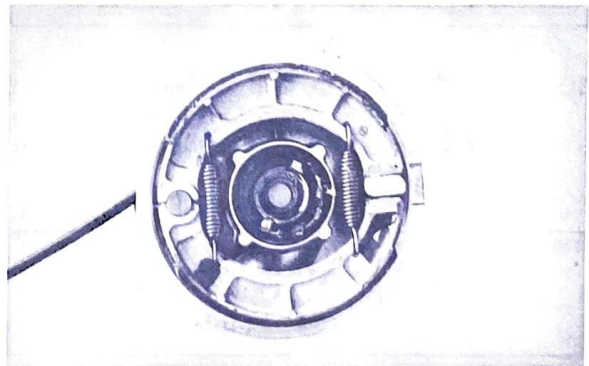
If the collar is dirty, clean with a rag.



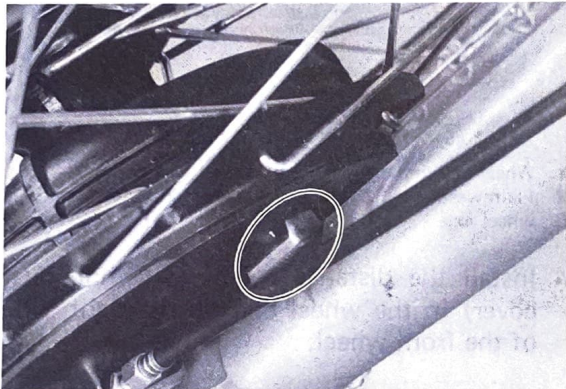
5. Wipe off any dust on the brake shoe linings and drum with a clean cloth.

6. Make sure the brake shoes and springs are correctly installed in the shoe plate assembly.

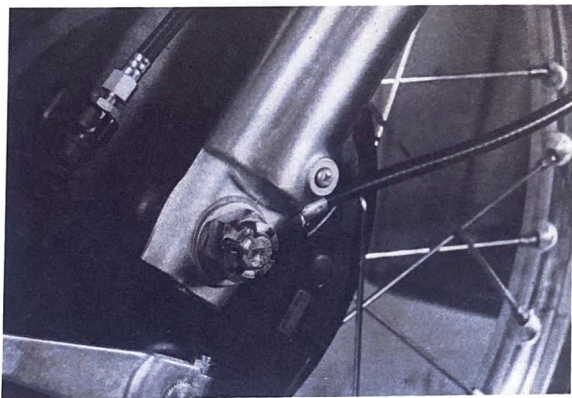
If any one of them is out of place, correct per the photo .



7. Install the brake shoe plate assembly in the wheel hub.
8. Insert the front wheel between the front fork legs so that the stopper (projection) on the front fork end correctly engages the slot in the brake shoe plate.



9. Install the wheel axle collar on the wheel axle. Then, insert the axle, mount the plain washer on the axle, and install the axle nut.

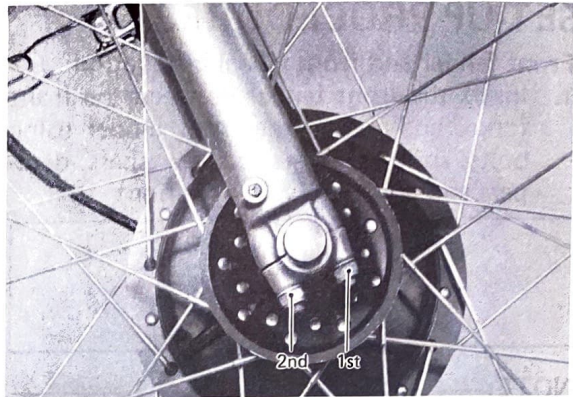


Tighten the wheel axle nut with specified torque.

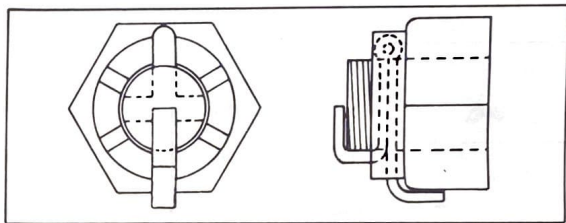
Tightening torque:
7.0 – 10.0 m·kg
(50 – 72 ft·lb)

10. Install the axle holder as shown. Tighten the nut on the front end of the axle holder, then tighten the nut on the rear end.

Tightening torque:
0.8 – 1.25 m·kg
(70 – 110 in·lb)

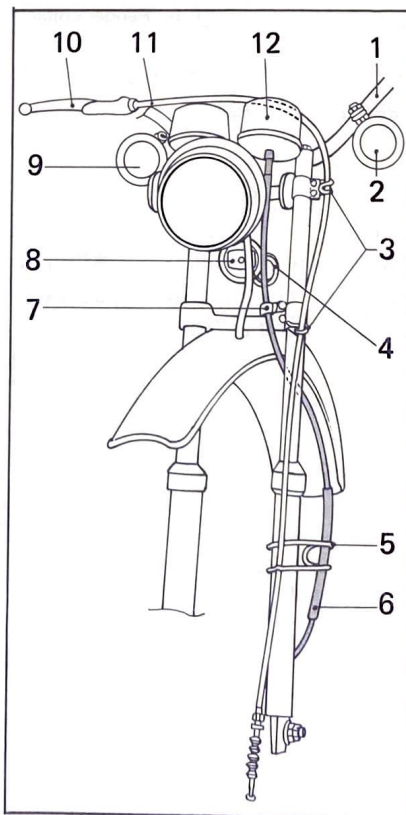


11. Lock the nut with cotter pin. The pin should be inserted downward, and the pin ends should be bent. (See Illustration)



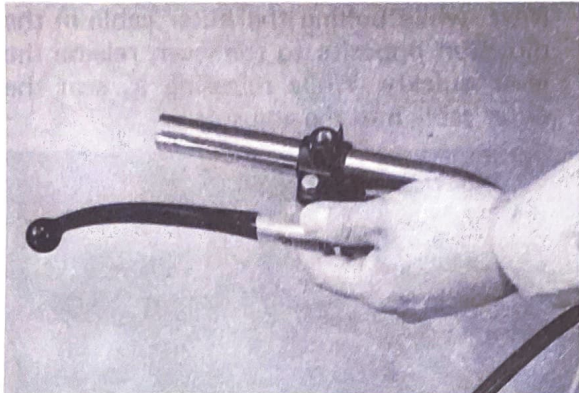
Connect the speedometer cable to the front wheel hub gear unit. Insert the cable end into the gear unit, fit the circlip in the groove on the wheel hub side, and lock the cable. (The circlip is already attached to the cable.)

*For detailed cable routing, refer to illustration.



1. Handlebar
2. Front flasher light (L)
3. Clip
4. Horn lead wire
5. Wire holder
6. Speedometer cable
7. Clamp
8. Horn
9. Front flasher light (R)
10. Front brake lever
11. Front brake wire
12. Speedometer

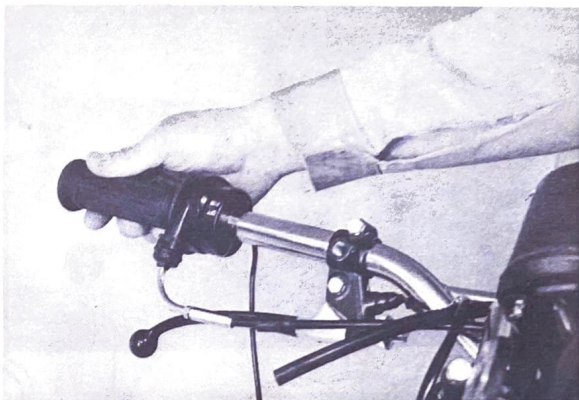
Insert the front brake lever holder into the right of the handlebar.



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 normal throttle return will be impaired.

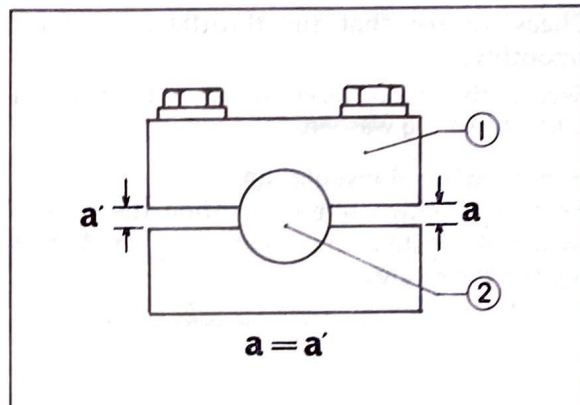


Handlebar installation

Install the handlebar using the two upper holders, four hexagon bolts and four spring washers.

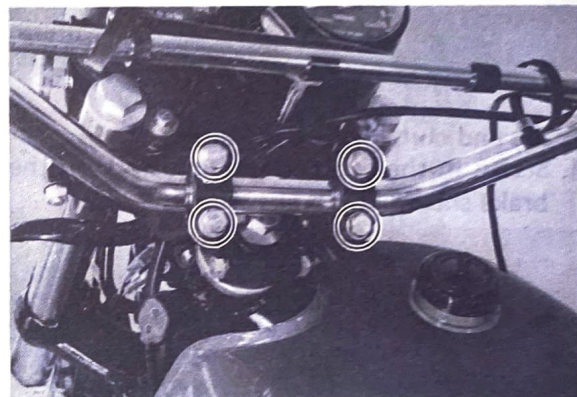
CAUTION:

Tighten the bolts in the stages and maintain an equal gap on each side of each holder.

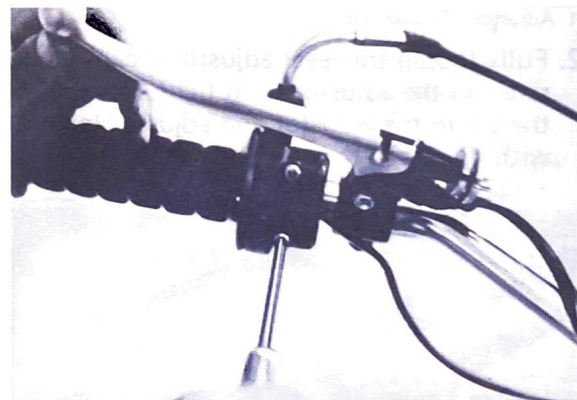


- 1. Holder
- 2. Handlebar

Tightening torque:
1.1 – 1.8 m·kg
(8.0 – 13.0 ft·lb)



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



CAUTION:

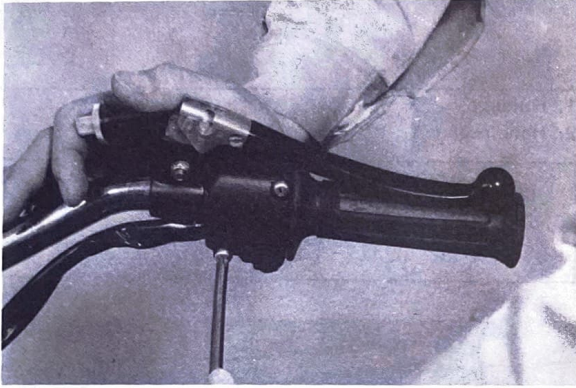
Tighten screws in stages and maintain an equal gap on each side of each holder.

Check to see that the throttle grip moves smoothly.

Secure the brake lever holder with hexagon bolt and spring washer.

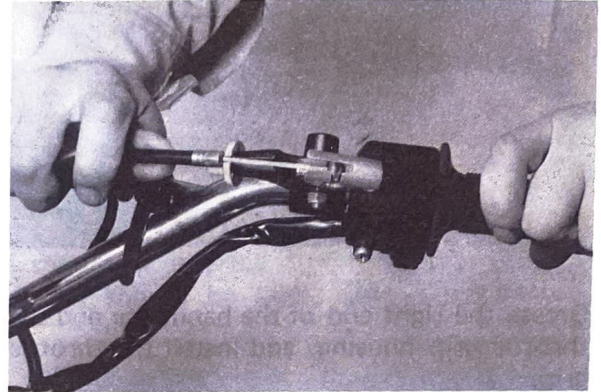
Handle switch 4 installation

Remove the two screws securing the handle switch 4. Install the handle switch 4 and tighten the screws.



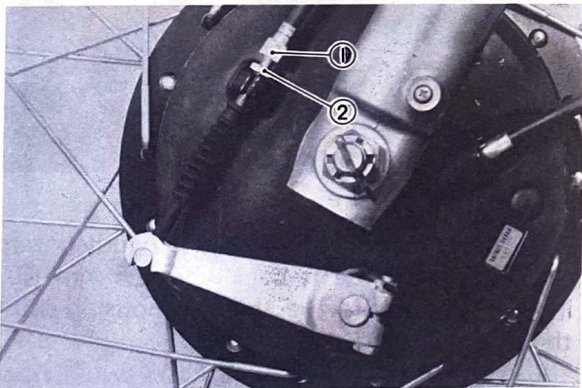
3. Insert the wire end into the lever hole, and hook the outer cable end onto the adjustor locknut, then squeeze the lever.

Next, while pulling the outer cable in the direction opposite to the lever, release the lever quickly. While releasing it, seat the outer cable into the adjustor.



Brake and clutch wire installation

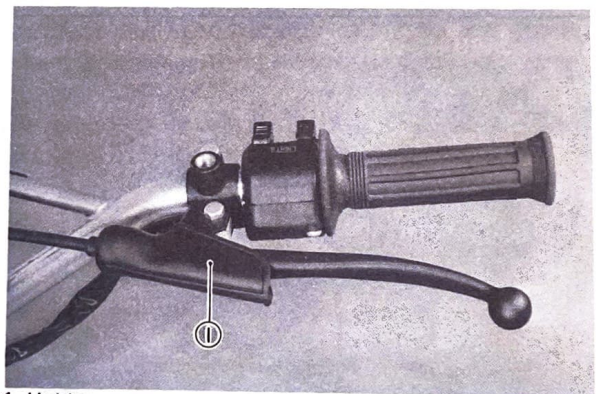
1. Screw in the cable length adjustors on the brake shoe plate (brake wire).



1. Adjustor 2. Locknut

2. Fully loosen the lever adjustor locknut, and screw in the adjustor until tight. Next, align the slit in the adjustor and adjustor locknut with the slit in the lever holder.

4. Cover the brake and clutch lever holders with holder covers.

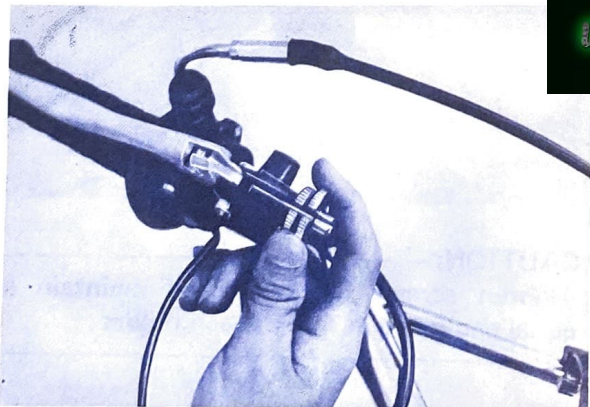


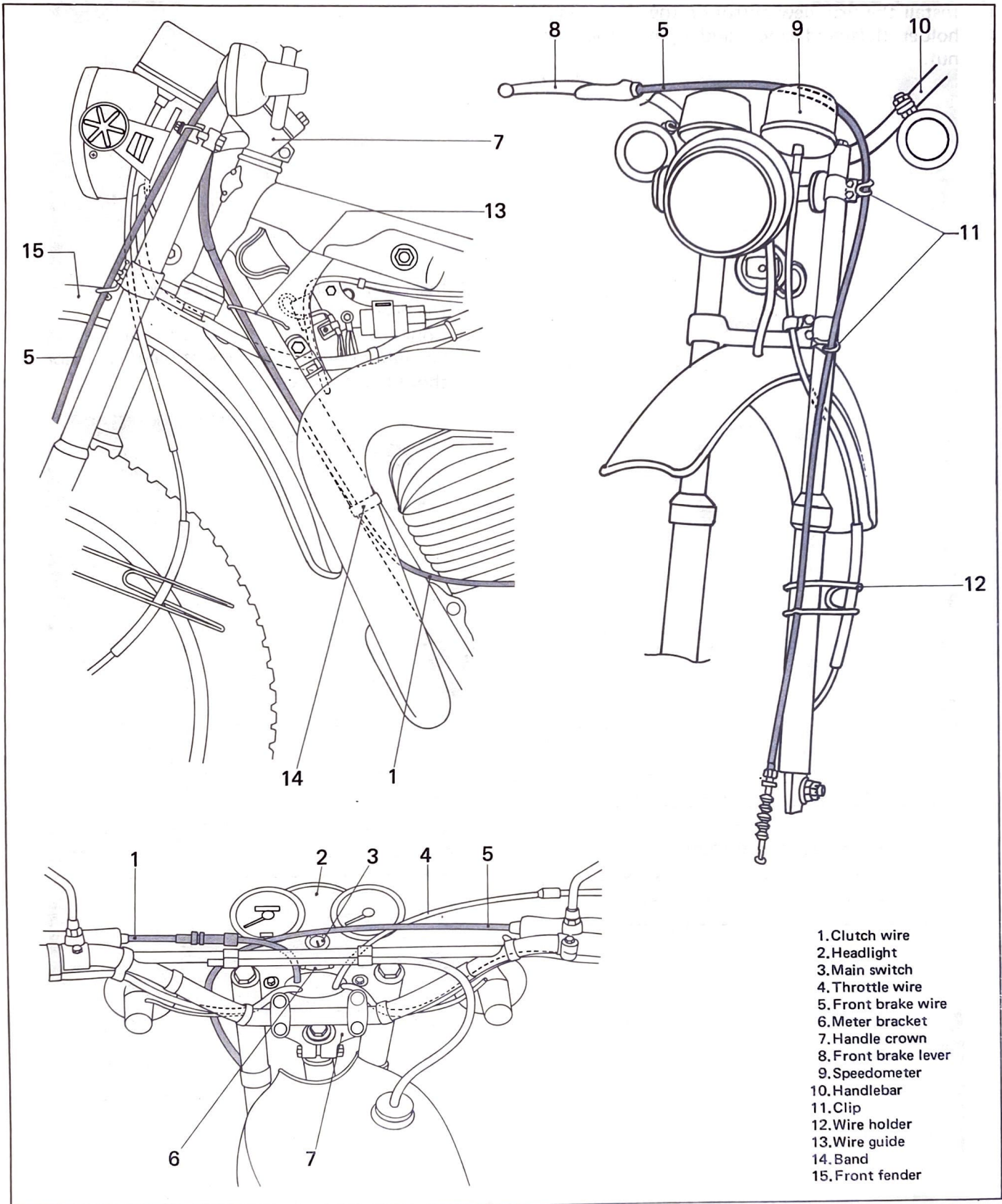
1. Holder cover

CAUTION:

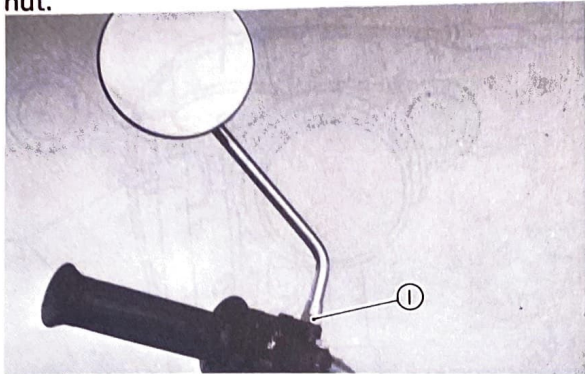
Proper cable routing is essential to insure safe vehicle operation.

For detailed cable routing refer to illustration.



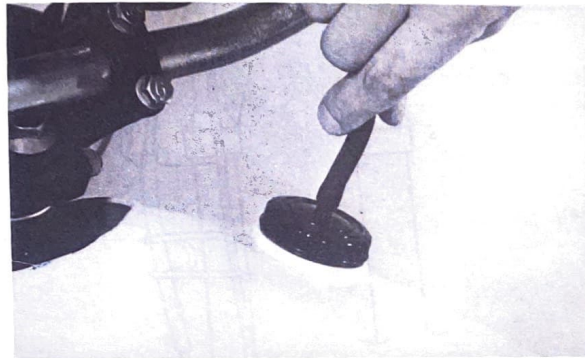


Install the rear view mirror on the clutch lever holder (lefthand side), and tighten the locknut.



1. Locknut

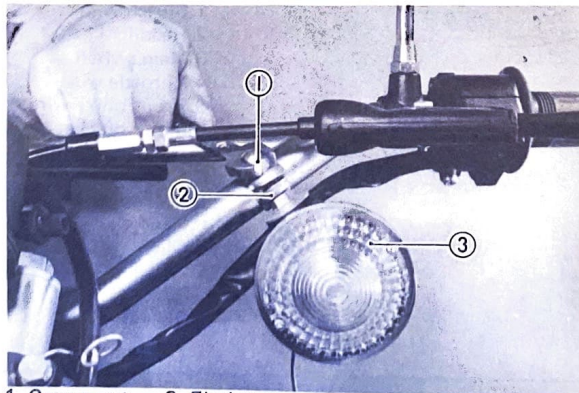
Connect the air breather pipe to the fuel tank cap.



Front flasher light installation

1. Install the flasher stays (left and right) on the handlebar.
2. Secure the flasher lights (left and right) to the flasher stays with crown nuts.

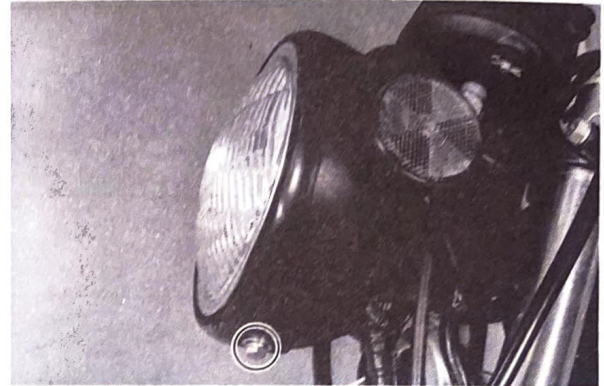
Flasher lead wire color:
 Right..... dark green
 Left..... dark brown



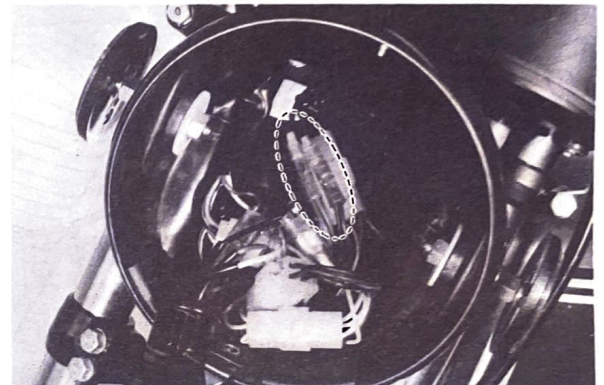
1. Crown nut 2. Flasher stay
 3. Flasher light

Front flasher light lead wires connection

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



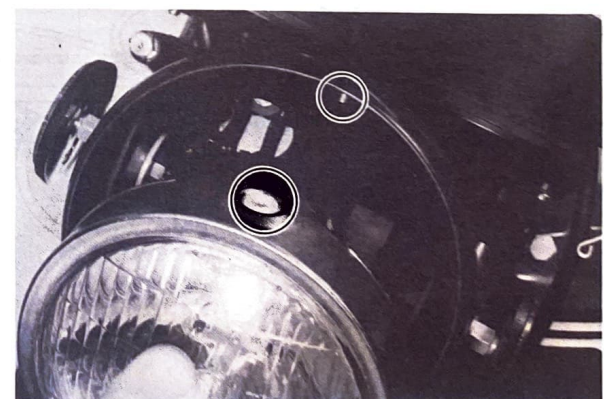
2. Insert the front flasher light lead wires into the headlight body.
3. Connect flasher light lead wires inside the headlight body. The wires of identical color should be connected.



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

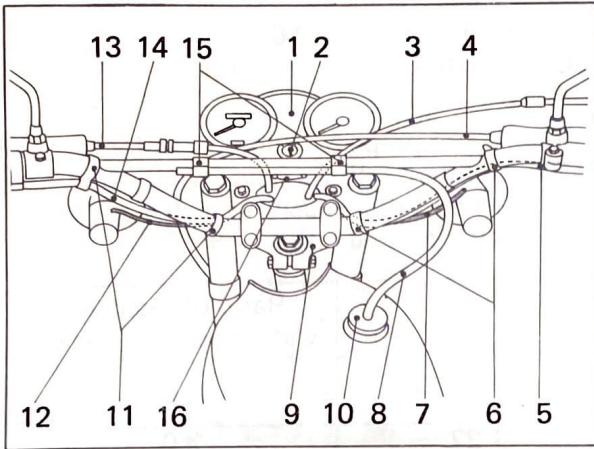
NOTE:

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



5. Secure the headlight assembly in place with the hexagon bolt.

6. Hold the lead wires to the handlebar (left and right side) with switch cord bands.

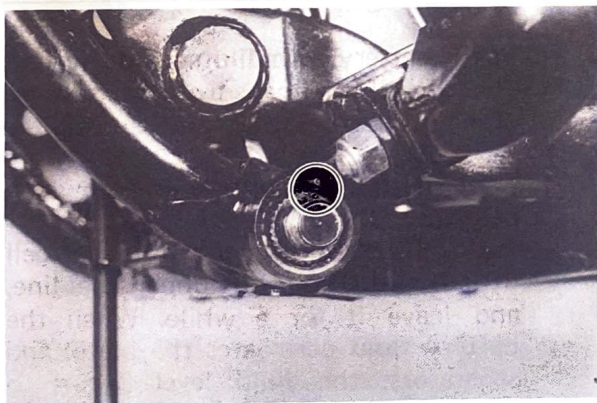


- | | |
|---|---------------------------------|
| 1. Head light | 9. Handle crown |
| 2. Main Switch | 10. Tank cap |
| 3. Throttle wire | 11. Switch cord band |
| 4. Front brake wire | 12. Flasher light (L) lead wire |
| 5. Engine stop switch and front stop switch lead wire | 13. Clutch wire |
| 6. Switch cord band | 14. Handle switch 4 lead wire |
| 7. Flasher light (R) lead wire | 15. Clip |
| 8. Air breather pipe | 16. Meter bracket |

Install the right footrest assembly.

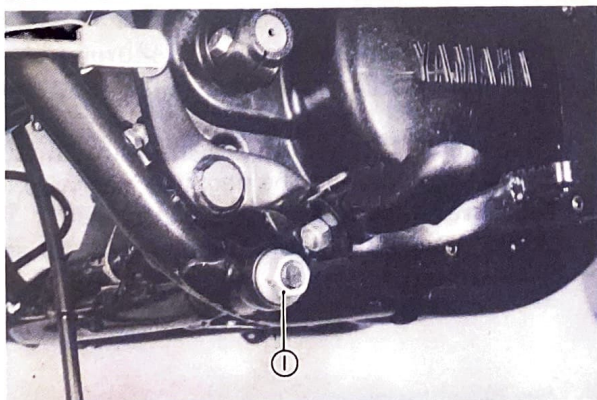
NOTE:

Match the punch mark on the footrest assembly to that the shaft punch mark as shown in the illustration.



Tighten the flange nut.

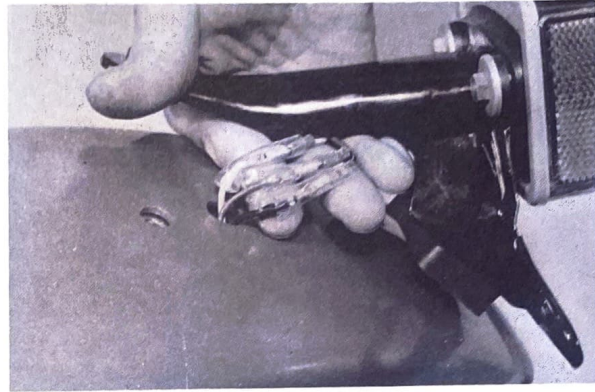
Tightening torque:
5.0–6.8 m·kg
(36–49 ft·lb)



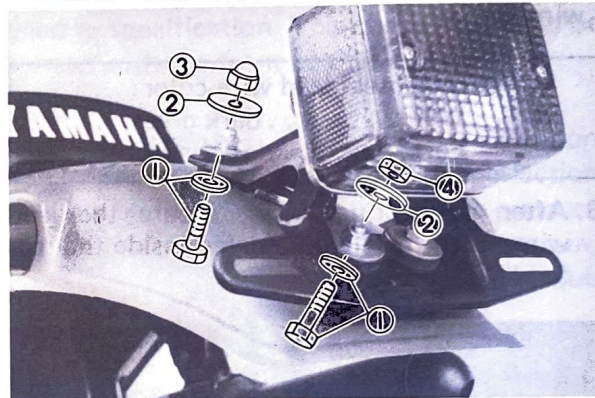
1. Flange nut

Tail light assembly installation

1. Remove the tail light assembly holding bolts, washers and nuts from the license bracket.
2. Connect the tail light assembly lead wire to the wire harness, and lock it with the hook. (The wires of identical color should be connected.)

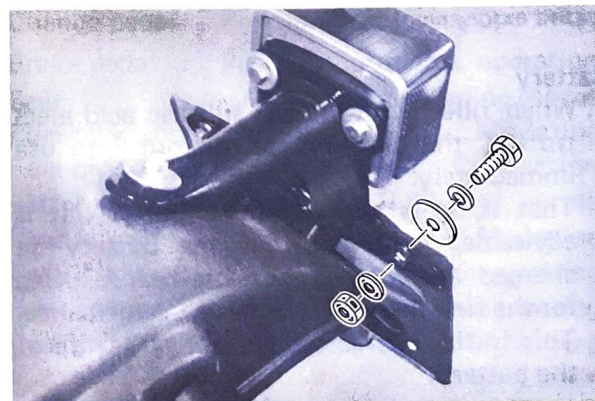


3. Secure the front part of license bracket using the bolt with plain washer, plate washer and crown nut.



- | | |
|---------------------------|----------------|
| 1. Bolt with plain washer | 3. Crown nut |
| 2. Plate washer | 4. Hexagon nut |

4. Secure the rear part of the license bracket using the shoulder bolts with plain washers, plate washers and hexagon nuts.
5. Secure the license plate support bracket to the license bracket with bolts, spring washers, plate washers, plain washers and nuts.

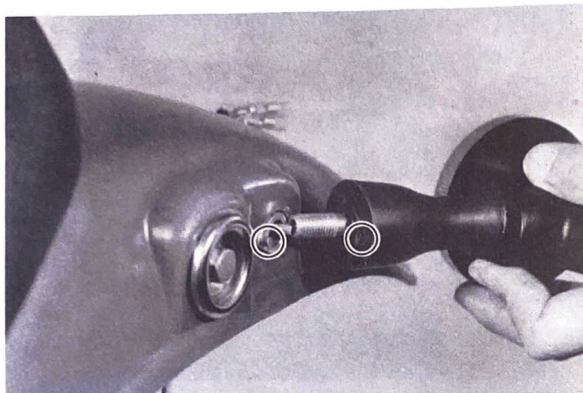


Rear flasher light installation

1. Install the flasher lights on the left and right side.

NOTE:

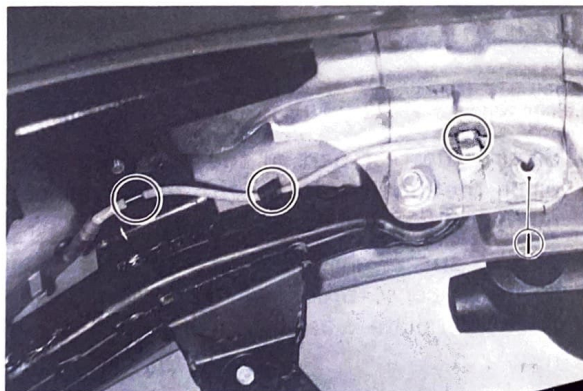
Fit the hole in the flasher light over the projection on the flasher collar.



2. Connect the flasher light lead wires to the wire harness.

Wire harness lead wire color:
Right. dark green
Left. dark brown

3. After connecting wires, secure the lead wires with the clamp located inside the rear fender.



1. Self locking nut

Battery

1. When filled with diluted sulfuric acid electrolyte, this battery can be put into use immediately.

That is, it is a dry-charged battery. It is advisable, however, that the battery be charged as much as possible before using for the first time for maximum performance. This initial charge will prolong the life of the battery.

Charging current: 0.6 A
Charging hours: 10 hours.

2. How to prepare diluted sulfuric acid
The diluted sulfuric acid can be prepared by adding sulfuric acid to distilled water at a specific mixing ratio.

Specific gravity at 20°C (68° F)	Ratio of distilled water to sulfuric acid
1.25	3.4
1.26	3.2
1.27	3.0
1.28	2.8
1.29	2.7
1.30	2.6

Pour distilled water into a glass container, and add sulfuric acid while stirring with a glass stick. Adding the acid will generate heat, and therefore, care should be taken so that heat does not rise excessively.

CAUTION:

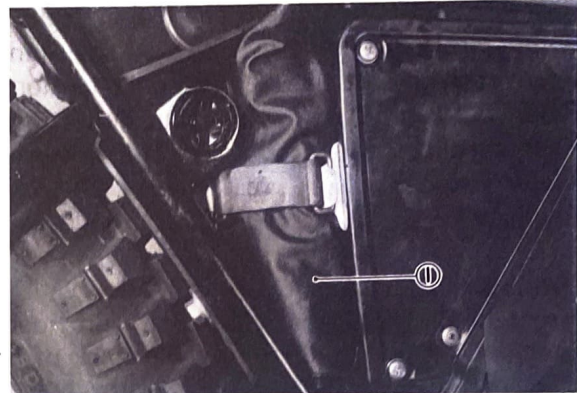
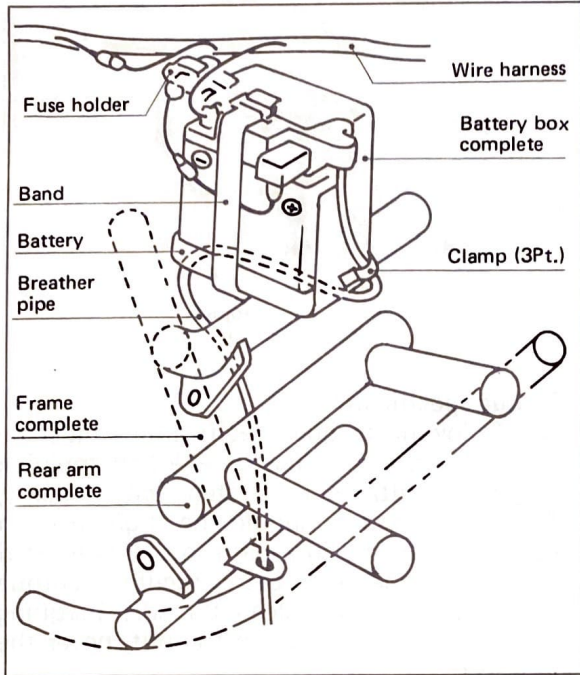
Never attempt to add distilled water to sulfuric acid.

3. Filling the battery with diluted sulfuric acid
 - 1) Remove all filter caps from the battery, and cut the breather pipe end at the same time.
 - 2) Cool the diluted sulfuric acid down to below 30° C (86° F).
 - 3) Pour diluted sulfuric 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 diluted sulfuric acid again.
 - 4) Charge the battery as required, and measure the specific gravity of the fluid.
 - 5) Install the filler caps, and thoroughly wipe off the fluid around the filler caps.

4. 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.
- 2) Secure the battery with a band.
- 3) The breather pipe should be layed out as illustrated.

NOTE:
 Rout the breather pipe outlet down and away from any part of the machine.



1. Tool kit
3. Lock the side cover door.

INSPECTION

Inspections

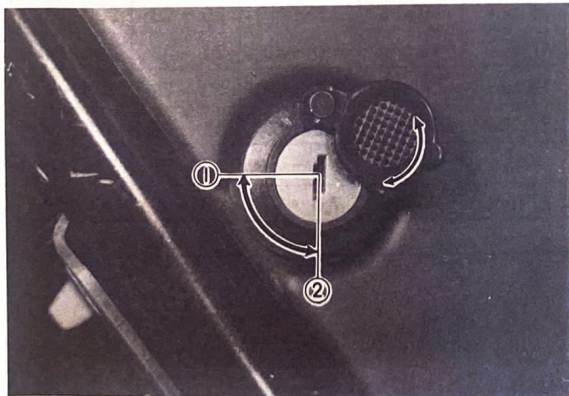
After all packed parts are installed, check to see that all these parts and other parts (mounted or installed at the Yamaha factory) are correctly mounted or installed, or tightened to specification. This check-up should be started with the front of the machine.

Item

- Front wheel spokes Tension
- Front wheel rim Hopping, deflection
- Front wheel tire Tire pressure
- Front wheel axle nut Cotter pin, tightening torque
- Front wheel axle holder lock nuts. Tightening torque
- Steering head lock nut Tightening torque
- Handlebar holder Tightening torque
- Clutch lever holder Tightening torque
- Brake lever holder Tightening torque
- Front flasher light Mounting, wiring
- Throttle housing Position, operation, tightness
- Engine mounting bolts Tightening torque
- Carburetor joint(s) Tightness
- Footrests Position, tightening torque
- Change pedal Position, looseness, operation
- Brake pedal Position, looseness, operation
- Seat. Mounting, tightening torque
- Fuel tank Mounting
- Fuel pipe Connection
- Battery Mounting, fluid level, wiring
- Rear fender Mounting
- Taillight Mounting, wiring
- Rear flasher light Mounting, wiring
- Rear swing arm pivot shaft Tightening torque

Tool kit installation

1. Rotate the key hole cover on the side cover door and insert the key (main switch key) into the key hole. Release the lock, by turning about 1/4 turn clockwise.



1. Open 2. Lock

2. Install the tool kit in the tool box and secure the tool kit with a band.



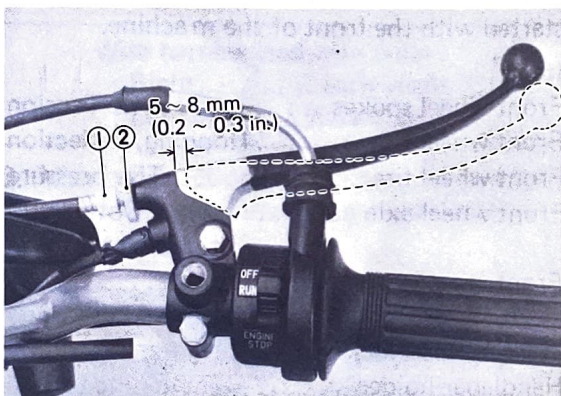
Rear axle nut . . . Cotter pin, tightening torque
 Safety pin (clevis pin)Cotter pin
 Rear wheel Spoke tension
 Rear wheel rim Hopping, deflection
 Rear wheel tire Tire pressure
 Transmission oil Oil level
 Engine oil Oil level

Front brake adjustment

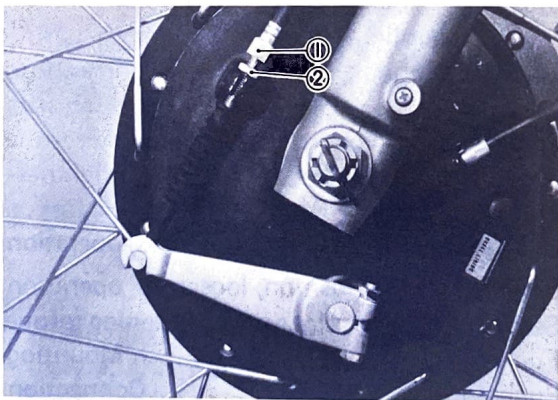
Front brake should be adjusted to suit rider preference with a minimum cable slack of 5 ~ 8 mm (0.2 ~ 0.3 in) play at the brake lever pivot point. Adjustment is accomplished at one of two places; either the handle lever holder or the front brake hub.

1. Loosen the adjustor locknut.
2. Turn the cable length adjustor in or out until adjustment is suitable.
3. Tighten the adjustor locknut.

When it is impossible to make an adjustment at the brake lever, ask a Yamaha dealer for adjustment at the brake shoe plate.



1. Adjustor 2. Locknut

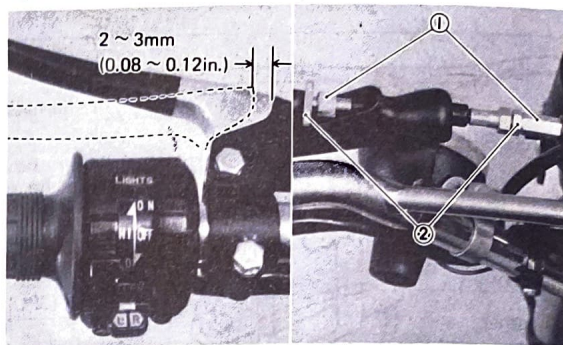


1. Adjustor 2. Locknut

Clutch adjustment

The clutch cable play can be adjusted in two ways: (1) using the adjustor attached to the clutch cable or (2) using the adjustor attached to the clutch lever holder. Loosen the

locknut and turn the adjust until the clearance between the front of the clutch lever and the lever holder is 2 ~ 3 mm. (1/16 ~ 1/8 in.).



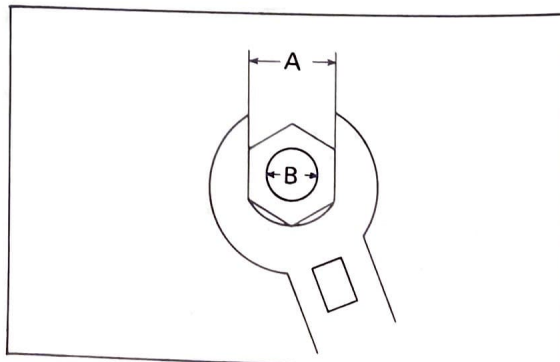
1. Adjustor
2. Locknut

Torque specification

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

NOTE: _____
 Certain items with other than standard thread pitches may require differing torque. Consult the model Service Manual or distributor if a question arises.

A (NUT)	B (BOLT)	TORQUE SPECIFICATIONS		
		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	5.6 ~ 6.5	41 ~ 49	480 ~ 570
24 mm	18 mm	5.8 ~ 7.0	42 ~ 50	504 ~ 600
27 mm	20 mm	7.0 ~ 8.3	50 ~ 60	600 ~ 700



www.legends-yamaha-enduros.com



SINCE 1887

YAMAHA MOTOR CO., LTD.

IWATA, JAPAN

LIT-11666-00-40

PRINTED IN JAPAN
75·5—2.05×1 □