



IT250H/IT465H

ASSEMBLY MANUAL



IMPORTANT NOTICE

This motorcycle may be equipped for general off road use. It may be illegal to operate this vehicle off-road when it is equipped for competition use.

Check you state and local riding area regulations. This vehicle is not manufactured for use on public streets, roads or high ways. Such use is prohibited by law. An off-road riding kit is provided with each vehicle to comply with noise level and spark ar-rester laws and regulations for installation instructions see directions in this manual. Performance will be substantially decreased. Returning is not required.

NOTICE

The service specifications given in this Assembly Manual are based on the model as manufactured. When this model may require improvements, the service specifications may be subject to change in the future. Modifications are inevitable and significant changes in specifications or procedures will be forwarded to Authorized Yamaha dealers. 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 harm to the rider.

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

NOTE: A NOTE provides key information to make procedure 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.

PREPARATION

To assemble the machine correctly, the proper (or suitable) service tools, supplies and working space are required.

Supplies

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

Work shop

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

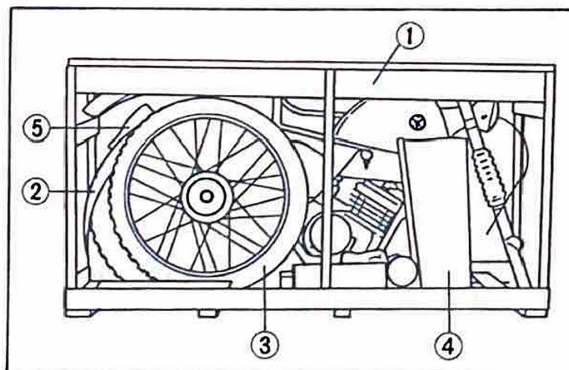
UNPACKING

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.

Procedure for unpacking

To remove the machine and parts packed in the cardboard crate, cut the vinyl bands around the box using scissors. Next, remove the exterior carton by lifting it straight up and remove the foam tray, front wheel, and seat.



1. Foam tray 2. Front fender 3. Front wheel
4. Seat 5. Headlight body

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.

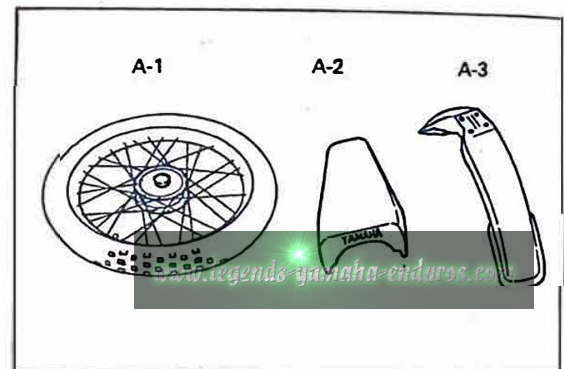
Lift up the machine, and remove the rear wheel section from the lower wooden case. Then take out the machine.

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.

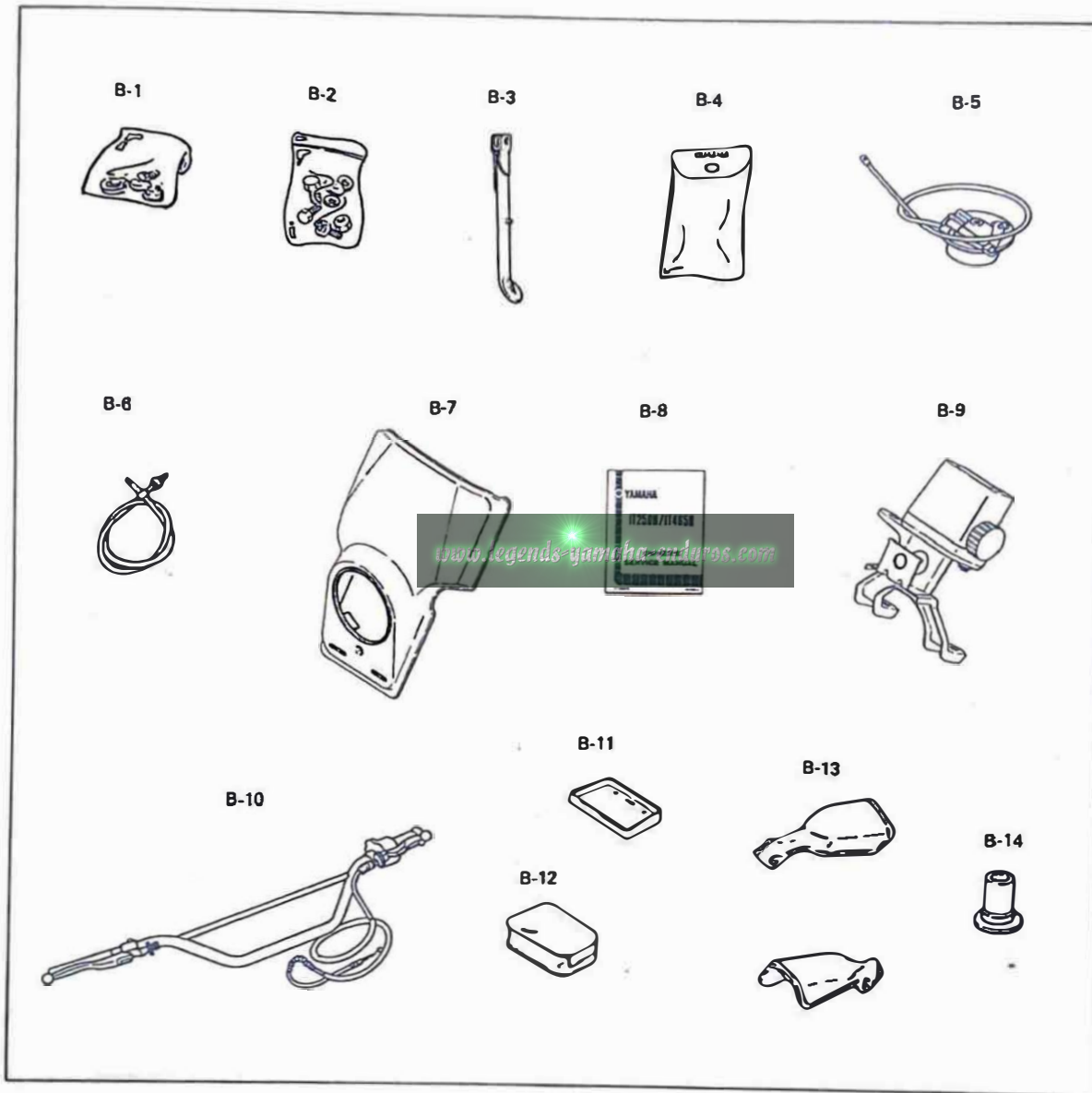
Part list A: Crate

No.	Part name	Q'ty
A-1	Front wheel	1
A-2	Semi double seat	1
A-3	Front fender	1



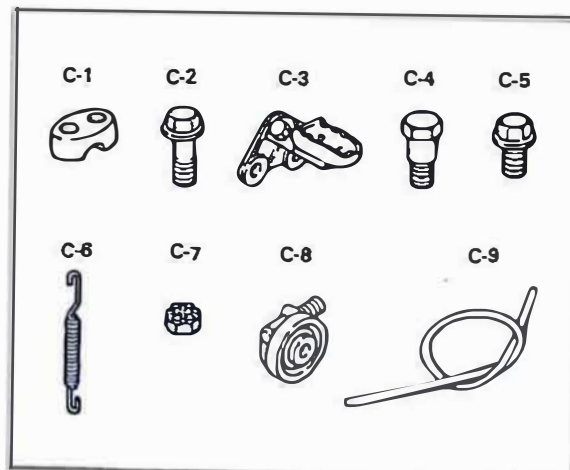
Part list B: Foam tray

No.	Part name	Q'ty
B-1	Vinyl bag 1	1
B-2	Vinyl bag 2	1
B-3	Side stand	1
B-4	Tool assembly	1
B-5	Brake shoe plate with wire	1
B-6	Meter cable	1
B-7	Headlight assembly	1
B-8	Owner's service manual	1
B-9	Trip odometer assembly	1
B-10	Handlebar assembly	1
B-11	Carrier bracket	1
B-12	Carrier box	1
B-13	Brush guard	2
B-14	Choke pipe	1



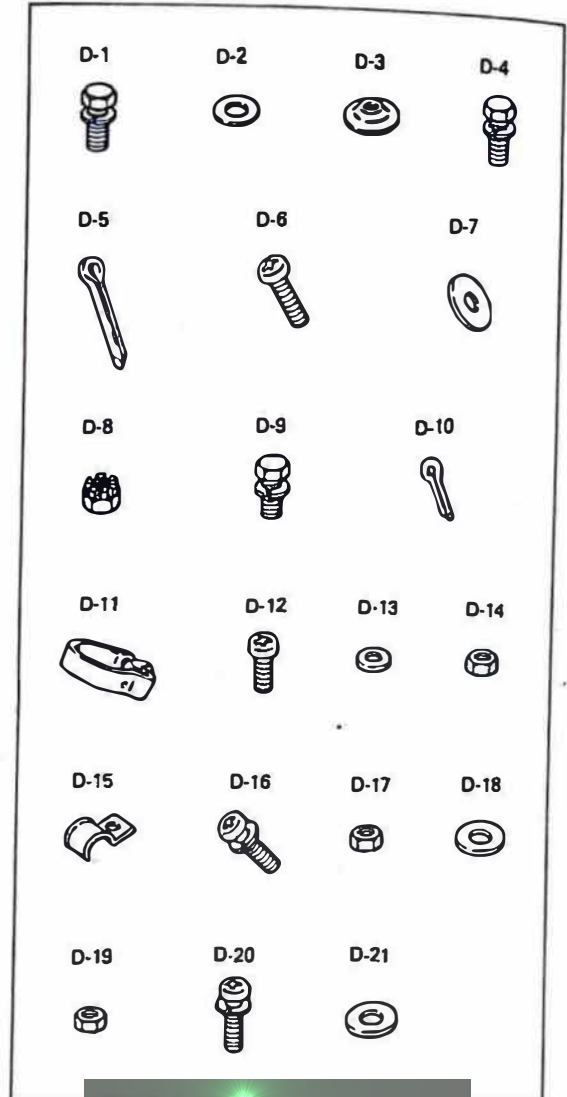
Part list C: Vinyl bag "1"

No.	Part name	Q'ty	Remarks
C-1	Handle upper holder	2	Handle
C-2	Frange bolt	4	
C-3	Footrest L.H	1	Footrest
C-4	Frange bolt (M10)	2	
C-5	Hexagon bolt (M10)	1	Side stand
C-6	Side stand spring	1	
C-7	Nut (M8)	1	
C-8	Meter gear unit	1	Front wheel
C-9	Breather pipe	1	Fuel tank



Part list D: Vinyl bag "2"

No.	Part name	Q'ty	Remarks
D-1	Bolt with washer (M6)	2	Seat
D-2	Plain washer (ø6)	4	Front fender
D-3	Coller (ø6)	4	
D-4	Bolt with washer (M6)	4	
D-5	Cotter pin	1	Front wheel
D-6	Panhead screw (M6)	4	Carrier box
D-7	Plain washer (ø6)	8	
D-8	U-unit (M6)	4	
D-9	Bolt with washer (M6)	2	Trip odometer
D-10	Cotter pin	1	Side stand
D-11	Wire holder	1	Trip odometer cable
D-12	Panhead screw (M5)	1	
D-13	Plain washer (ø5)	1	
D-14	Nut (M5)	1	
D-15	Clamp	2	Front brake cable
D-16	Panhead screw with washer (M6)	1	
D-17	Nut (M6)	1	
D-18	Plain washer (ø6)	1	Brush guard
D-19	Panhead screw with washer (M6)	2	
D-20	Nut (M6)	2	
D-21	Plain washer (ø6)	2	

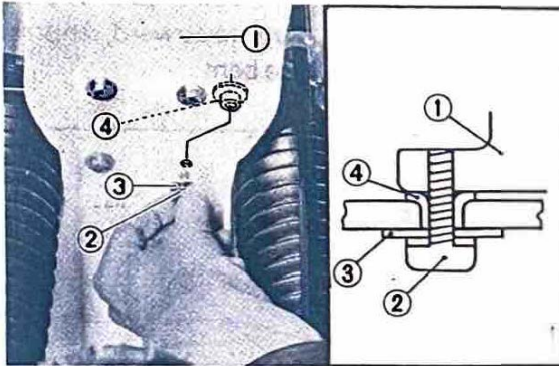


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SET-UP PROCEDURES

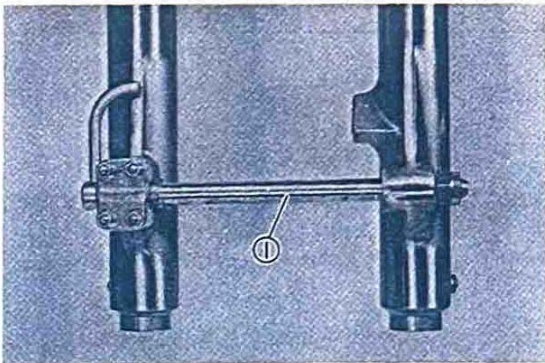
1. To set up the machine, place a proper-size wooden box under the engine to keep the front of the machine raised off the floor. Take care so that the machine does not fall over.
2. Insert the front fender between the front fork legs, and secure the fender.

Tightening torque: 1.0 m·kg (7 ft·lb)



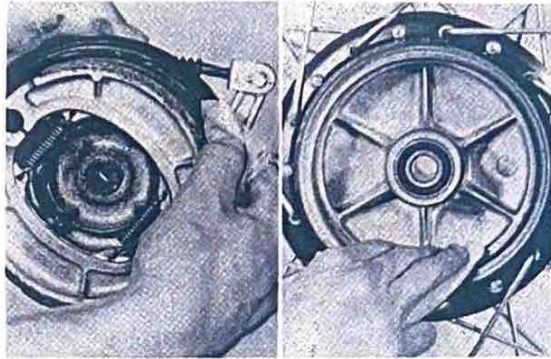
1. Front fender
2. Bolt with spring washer
3. Plain washer (D-2)
4. Fender collar (D-3)

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



1. Wheel axle

4. Clean the brake shoe linings and wheel hub with a clean cloth.



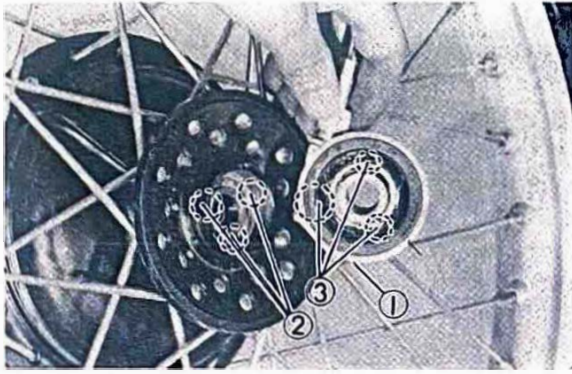
5. Make sure the brake shoes and springs are correctly installed in the shoes plate assembly. If any one of them is out of place, correct per the figure.



6. Install the meter gear unit assembly (C-8) in the wheel hub on the right side of the front wheel.

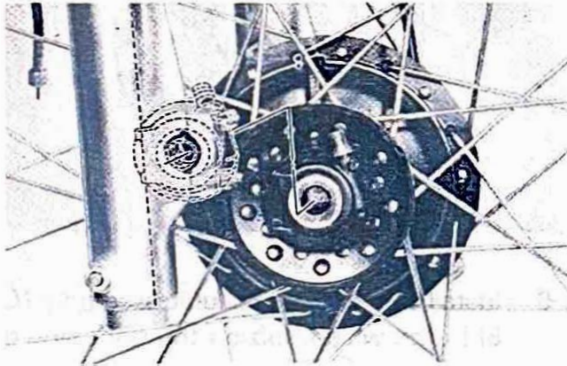
NOTE:

1. To avoid damaging the oil seal lip, apply a light coat of lithium base grease to the oil seal lip and meter gear unit assembly.
2. Make sure that the three projections on the inside of the wheel hub are respectively placed between the projections on the meter clutch.



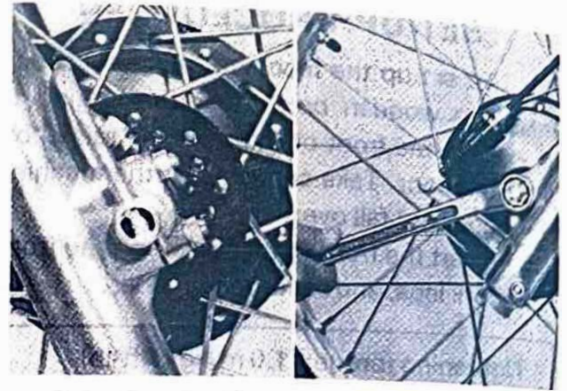
1. Meter gear unit (C-8) 2. Projection (Wheel hub)
3. Projection (Meter clutch)

7. Install the brake shoe plate assembly (B-5) in the wheel hub.
8. Insert the front wheel between the front fork legs so that the stopper (projection) on the front fork end is correctly engaged with the slot in the brake shoe plate.

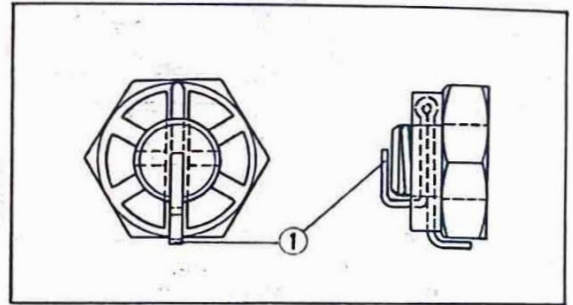


9. Insert the axle, and torque the axle nut to specification.

Tightening torque: 6.0 m-kG (42 ft-lb)



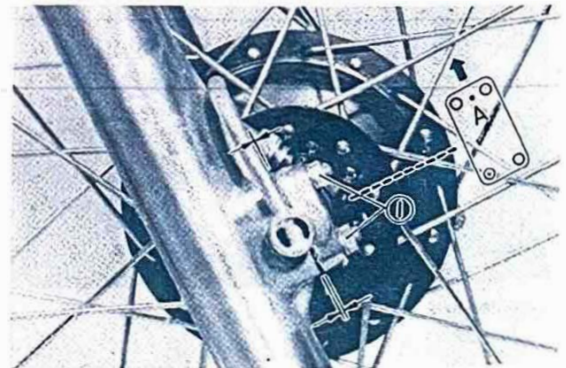
10. Lock the nut with cotter pin. The pin should be inserted downward, and the pin ends should be bent.



1. Cotter pin (D-5)

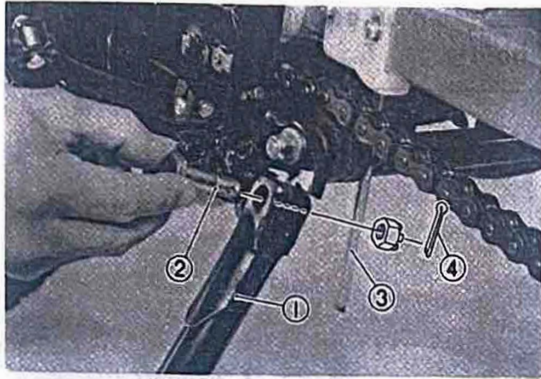
11. Tighten the axle holder nuts and torque to specification.

Tightening torque: 1.0 m-kG (7 ft-lb)

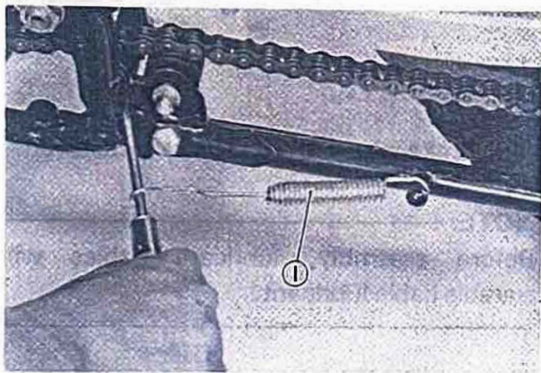


1. Axle holder nut

12. Install the side stand.

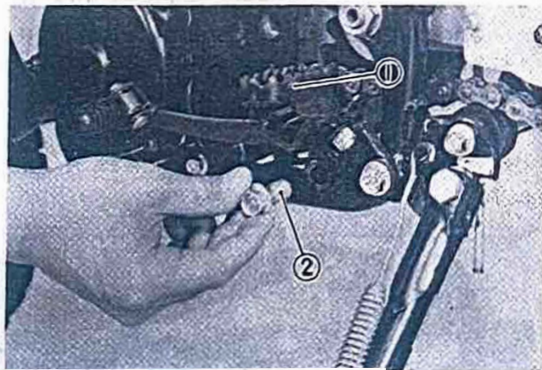


1. Side stand (B-3) 2. Bolt (C-5)
3. Nut (C-7) 4. Cotter pin (D-10)



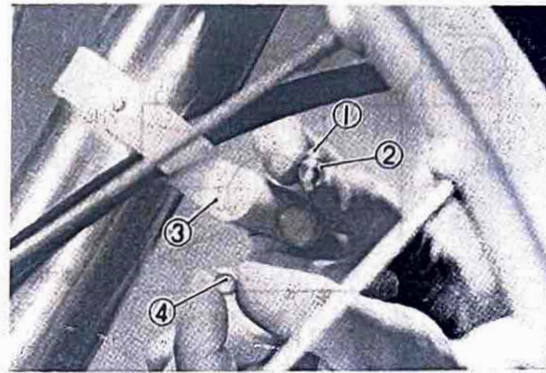
1. Spring (C-6)

13. Install the footrest assembly.



1. Footrest assembly (C-3) 2. Bolt (C-4)

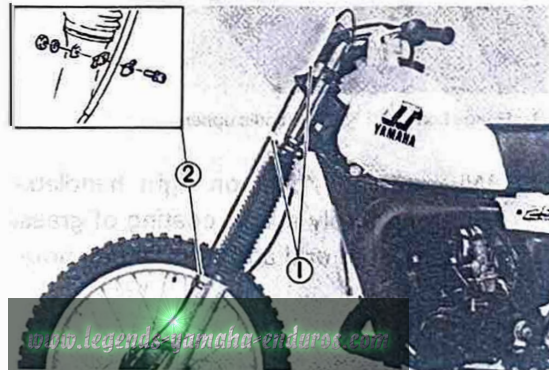
14. After passing the cable through the holder, install it to outer tube.
Connect the meter cable to gear unit.



1. Panhead screw (D-12) 2. Plane washer (D-13)
3. Holder (D-11) 4. Nut (D-14)

15. Pass the front brake wire through the wire holder (1) as shown. And install the wire holder (2).

For detailed cable routing, refer to
"CABLE ROUTING DIAGRAM"
(P.11 ~ 12)

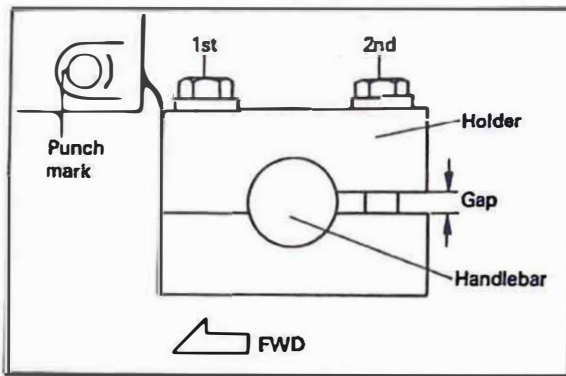


1. Wire holder (1) 2. Wire holder (2)
3. Panhead screw (D-16) 4. Cramp (D-15)
5. Plain washer (D-18) 6. Nut (D-17)

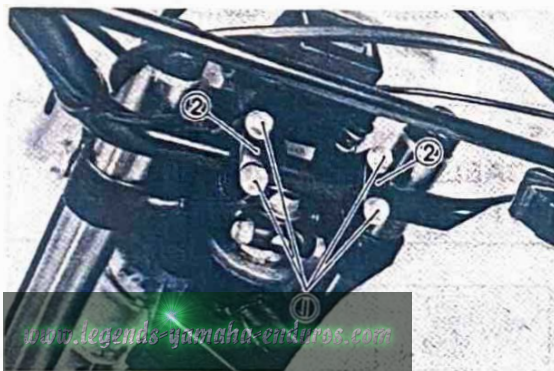
16. Install the handlebars.

CAUTION:

First tighten the bolt on the front end of holder, and tighten the bolt on the rear end.



Tightening torque: 2.3 m·kg (16 ft·lb)



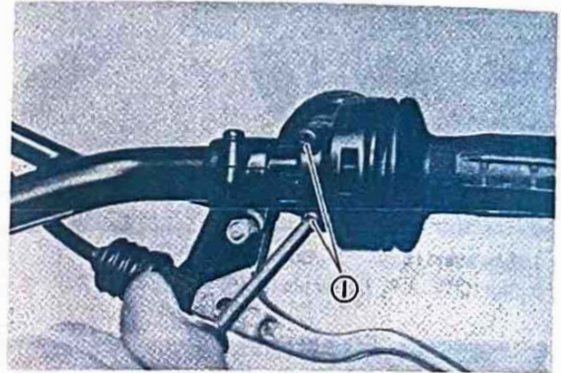
1. Flange bolt (C-2) 2. Handle upper holder (C-1)

17. Wipe off any dust on right handlebar end, and apply a light coating of grease to handlebar end and throttle grip housing.



18. Bolt the upper and lower throttle housing together, and check the throttle grip for smooth action, then tighten the throttle housing screws.

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

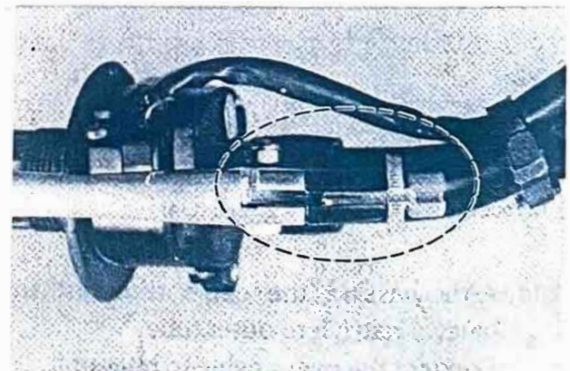


1. Throttle housing screws

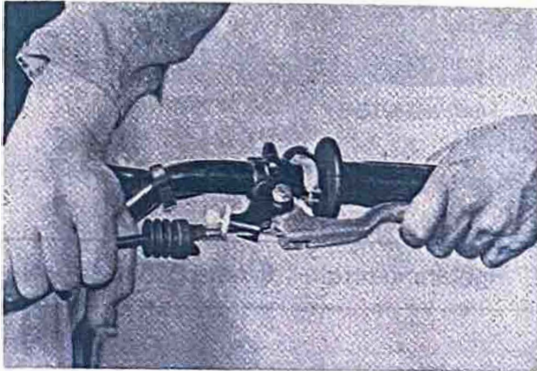
19. Brake wire and clutch wire installation.

NOTE:
Before assembly, lubricate cables with suitable cable lubricant.

- a. Screw in the cable length adjusters on the brake shoe plate (brake wire) and cable length adjuster (clutch wire).
- b. Fully loosen the lever adjuster lock nut and screw in the adjuster until it is tight. Next, align the slits in the adjuster and adjuster lock nut with the slit in the lever holder.



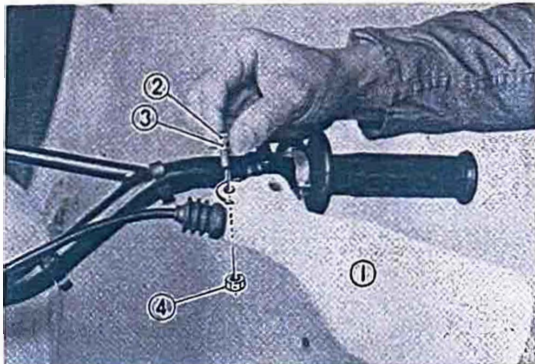
- c. Insert the wire end into the lever hole, and hook the outer cable end onto the adjuster lock nut, then squeeze the lever. Next, while outer cable in the direction opposite the lever, release the lever quickly. While releasing it, seat the outer cable into the adjuster.



WARNING:

Proper cable and wire routing is essential to insure safe vehicle operation, refer to "CABLE ROUTING DIAGRAM" (P.11 ~ 12)

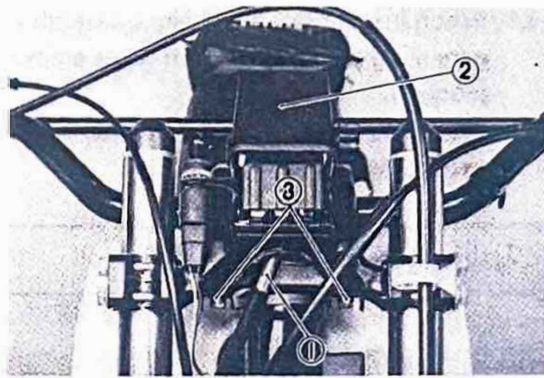
- d. Install the brush guards as shown.



1. Brush guard (B-13) 2. Panhead screw (D-19)
3. Plain washer (D-21) 4. Nut (D-20)

20. Install the trip odometer assembly under the handle crown.

Tightening torque: 0.7 m·kg (5 ft·lb)

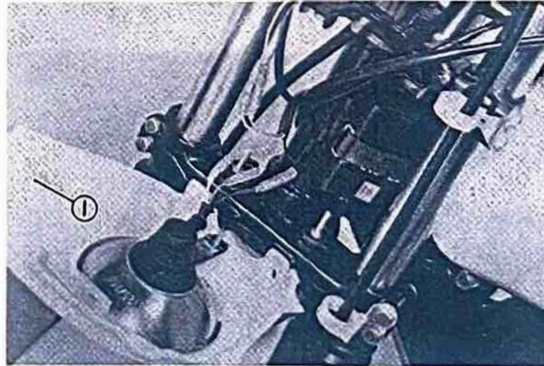


1. Meter cable (B-5) 2. Meter assembly (B-9)
3. Bolt with washer (D-9)

21. Connect the meter cable to the trip odometer. Tighten securely with fingers.

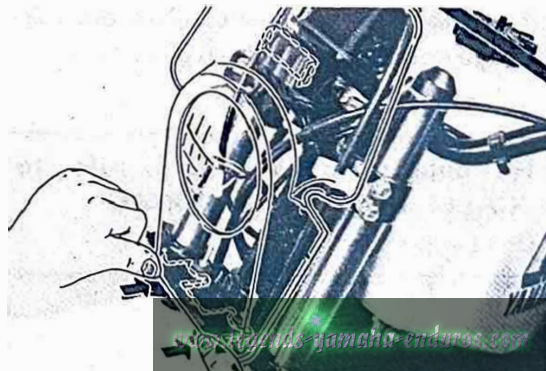
For detailed cable routing, refer to "CABLE ROUTING DIAGRAM" (P.11 ~ 12)

22. Connect the headlight switch wire to the headlight unit.



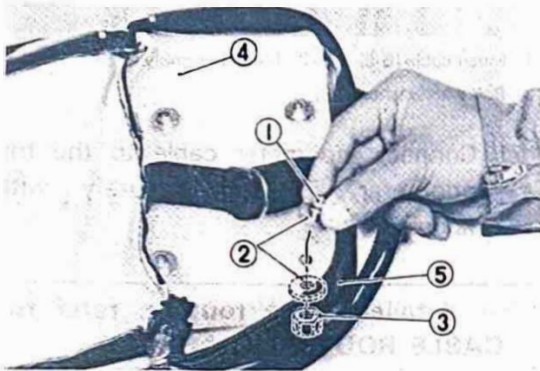
1. Headlight assembly (B-7)

23. Install the headlight body.



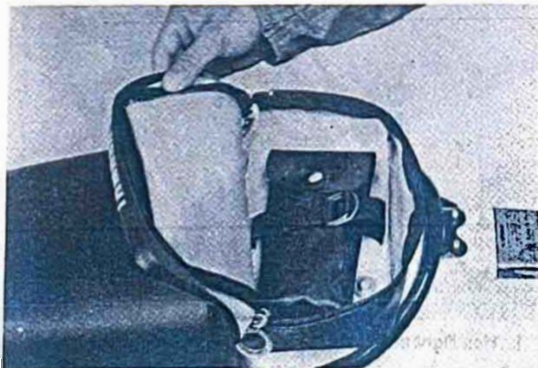
24. When installing the headlight assembly, care should be used so that wires are not pinched.
25. Install the carrier box and bracket at the rear of the frame.

Tightening torque: 0.7 m·kg (5 ft·lb)



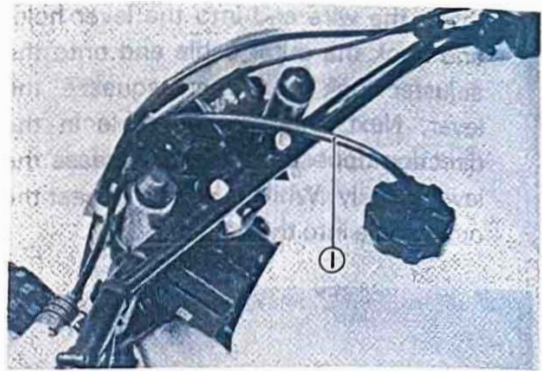
1. Panhead screw (D-6)
2. Plain washer (D-7)
3. U-nut (D-8)
4. Carrier bracket (B-11)
5. Carrier box (B-12)

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



27. Connect one end of the air breather pipe on the fuel tank filter cap, and other end go down along the head pipe.

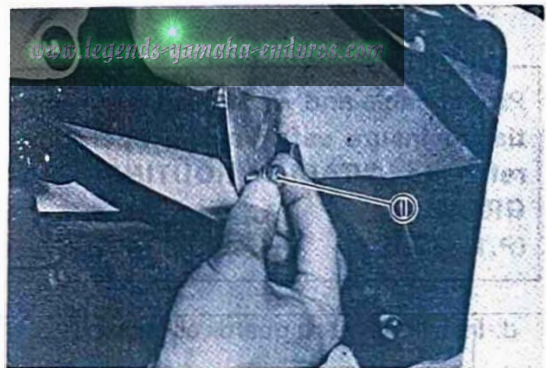
For detailed cable routing, refer to
"CABLE ROUTING DIAGRAM"
(P.11 ~ 12)



1. Breather pipe (C-9)

28. Install the seat to the frame.

Tightening torque: 0.7 m·kg (5 ft·lb)



1. Hexagon bolt (D-1)

INSTALLATION OF THE OFF-ROAD RIDING KIT

An off-road riding kit is provided with each vehicle to comply with noise level and spark arrester laws and regulations.

Performance will be substantially decreased.

IMPORTANT NOTICE

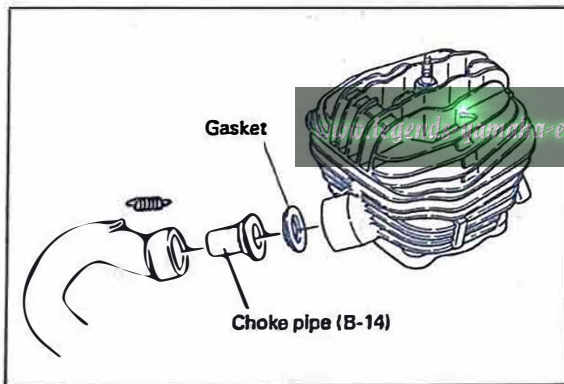
Always check the local regulations governing the areas where you will ride. An 86 dB(A) silencer spark arrester kit is provided with this vehicle for use where required. Installation of kit will reduce performance substantially. This vehicle may not be legally operated public streets, roads or high-ways. Such use is prohibited by law.

Kit part.

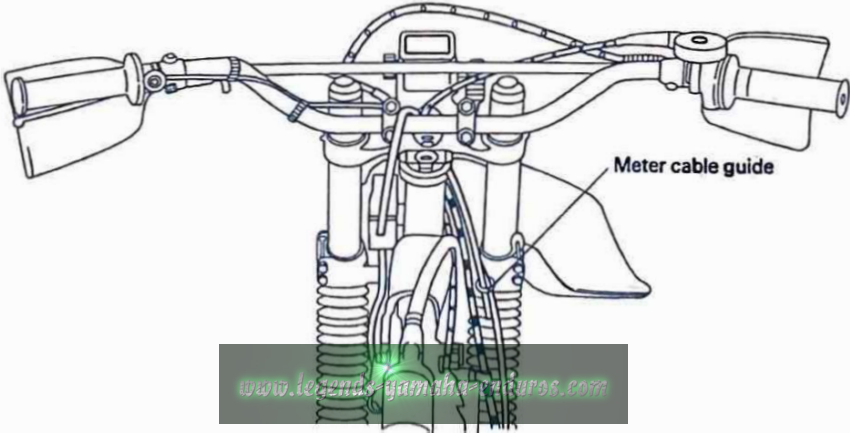
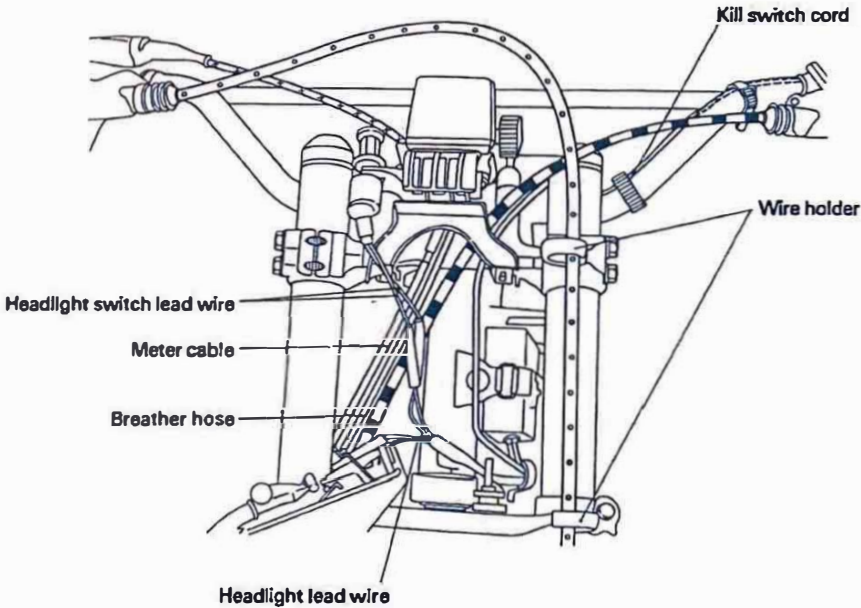
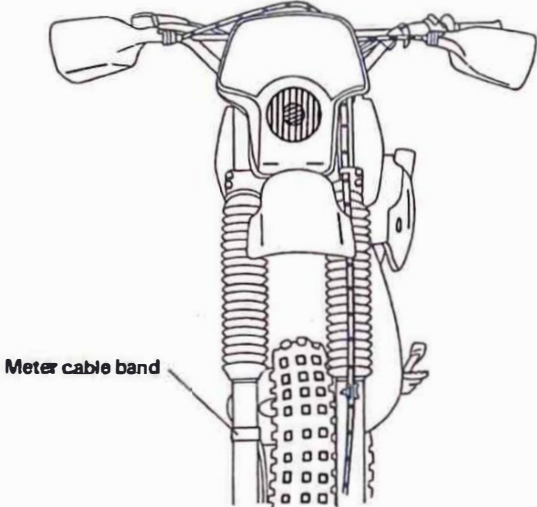
Part name	Q'ty	
	IT250H	IT465H
Choke pipe	1	1

Installing the kit part

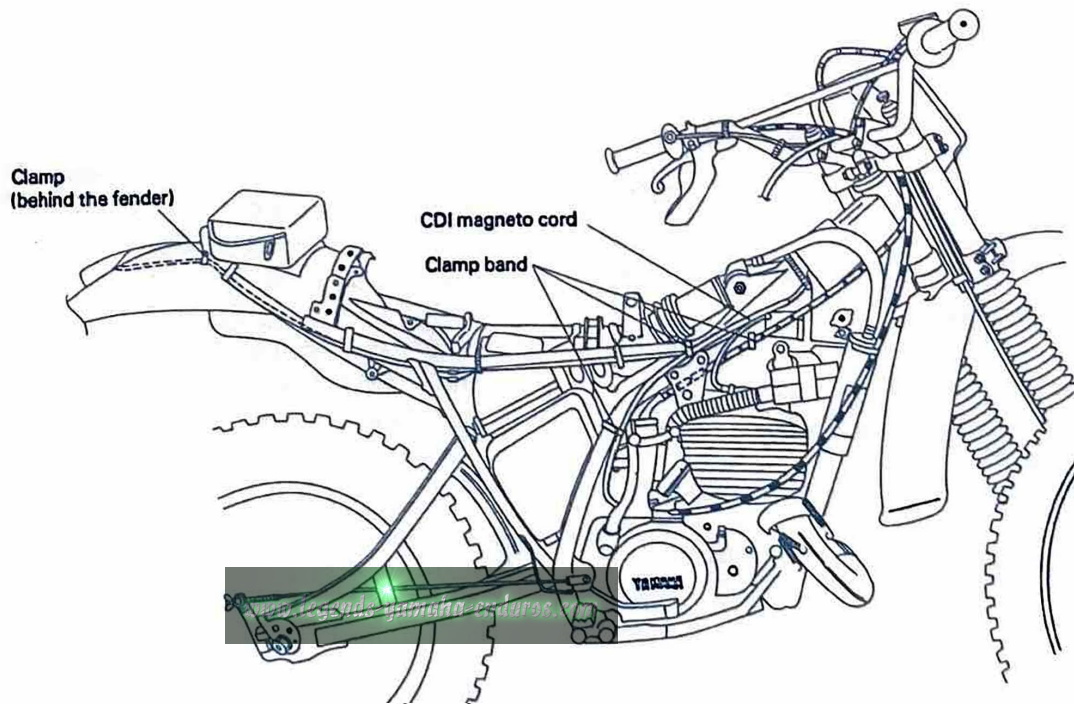
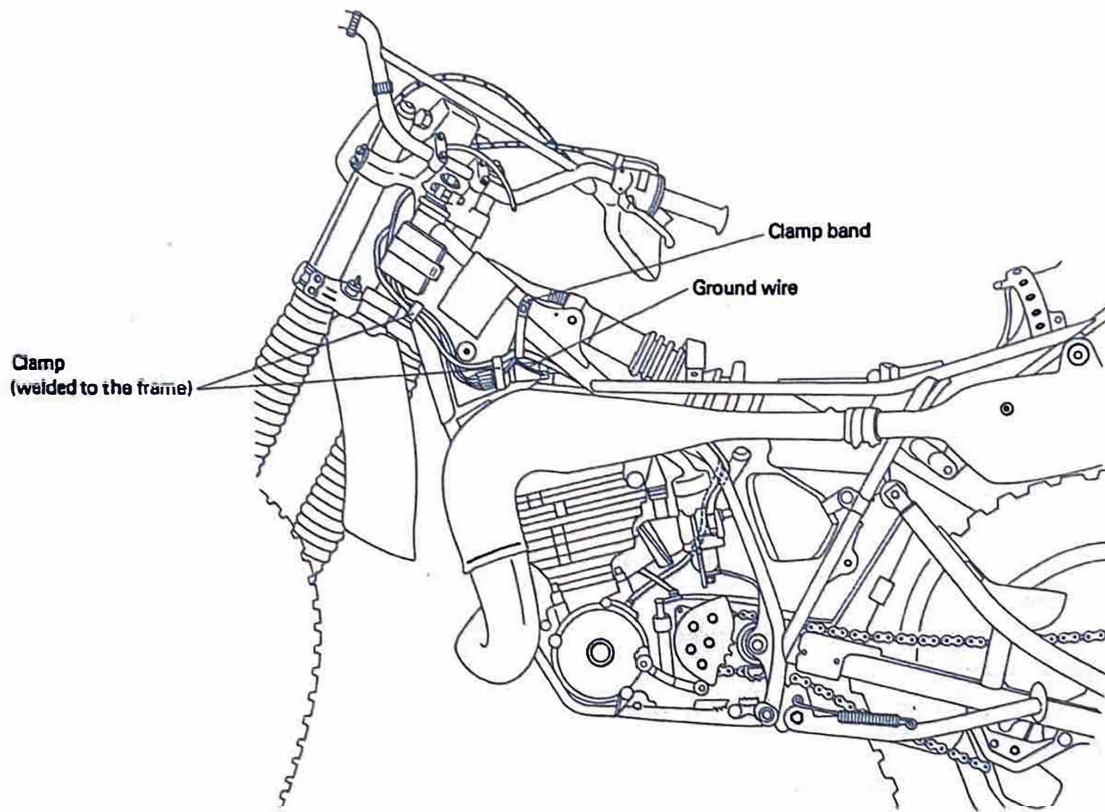
1. Choke pipe



CABLE ROUTING DIAGRAM



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INSPECTIONS AND ADJUSTMENTS

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, tightened or adjusted to specification. This check-up should be started with the front of the machine.

Item

Front wheel spokes	..... Tension
Front wheel rim	..... Deflection
Front wheel tire	..... Tire pressure
Front wheel axle nut	..... Cotter pin, Tightening torque
Steering head	..... Adjustment, Tightening torque
Handle holder	..... Tightening torque
Clutch lever	..... Freeplay, Tightening torque
Clutch wire	..... Routing, Lubrication
Brake lever	..... Freeplay, Tightening torque
Front brake wire	..... Routing, Lubrication
Throttle wire	..... Routing
Throttle housing	..... Position, Operation, Freeplay
Carburetor joints	..... Tightness
Footrest	..... Position, Tightness
Change pedal	..... Tightness, Operation
Brake pedal	..... Position, Freeplay, Operation
Seat	..... Mounting
Fuel tank	..... Fuel level, Mounting

Fuel pipe	..... Clips, Connection
Fuel breather pipe	..... Routing connection
Rear fender	..... Mounting
Rear shock absorber	..... Cotter pin, Mounting
Rear swing arm pivot shaft	..... Tightening torque
Rear axle nut	..... Tightening torque
Chain	..... Deflection, Cam position
Rear wheel	..... Spoke tension
Rear wheel rim	..... Deflection
Rear wheel tire	..... Tire pressure
Transmission	..... Oil level
Speedometer cable	..... Routing
Electrical components	..... Adjustment, Operation
Lead wires	..... Routing, Clamp

Adjustments

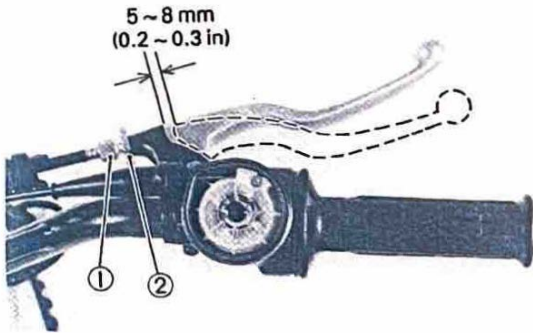
NOTE:

This section deals with the main points only. For details, refer to the service manual for this model.

1. Front brake

Loosen the brake wire adjuster lock nut, and adjust the play of the brake lever to specification. After the adjustment, be sure to screw in the lock nut until tight.

Free play: 5 ~ 8 mm (0.2 ~ 0.32 in)

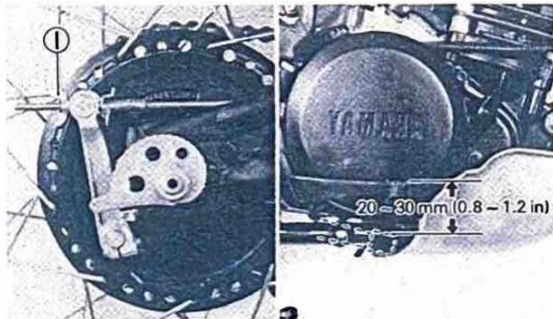


1. Adjuster 2. Lock nut

2. Rear brake

Adjust the rear brake pedal free play to suit, providing a minimum of 20 ~ 30 mm (0.8 ~ 1.2 in).

Turn the adjusting nut on the rear brake ferrule in or out until brake pedal free play is suitable.



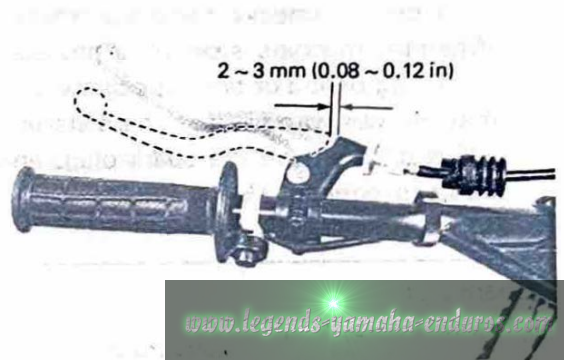
1. Adjusting nut

3. Clutch

Loosen the clutch wire adjuster lock nut and adjust the clutch wire by turning the wire adjuster.

Turning the adjuster clockwise (adjuster is tightened) increases clutch wire play. While turning counterclockwise decreases the play.

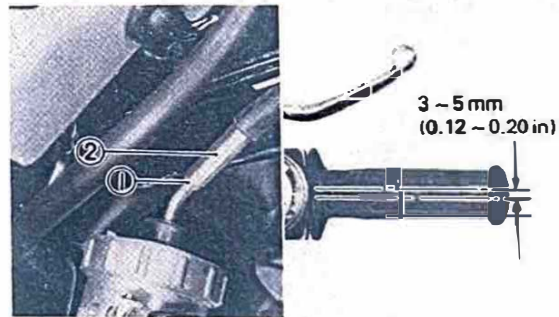
Free play: 2~3 mm (0.08 ~ 0.12 in)



1. Adjuster 2. Lock nut

4. Throttle

Check play in turning deflection of throttle grip. 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. After adjusting, be sure to tighten the lock nut properly.



1. Lock nut 2. Adjuster

Trouble shooting

If the engine will not start or will not start easily after inspections and adjustment, check the following parts.

1. Ignition timing — checking and adjustment

After starting the engine, check the ignition timing, and if necessary, adjust.

Ignition timing (B.T.D.C):

IT250H: 1.65 mm ± 0.1 mm
(0.065 in ± 0.004 in)
16.5°/5,000 r.p.m.
IT465H: 2.05 mm ± 0.1 mm
(0.081 in ± 0.004 in)
16°/2,000 rpm

2. Spark plug — Checking and adjustment.
When the machine is stored or not used for a long period of time, the spark plug may get wet with oil. If so, hard starting will result, remove the spark plug, and clean as required.

Spark plug:

Type...IT250H N-2G
 IT465H N-3 Champion
Gap...0.7 mm (0.028 in)

3. Carburetor — Cleaning
Remove the drain screw attached to the carburetor float bowl, and drain off the fuel. Add fresh fuel.

NOTE: _____

For details, refer to the owner's service manual for this model.

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