CHAPTER 2.
PERIODIC INSPECTIONS AND ADJUSTMENTS

PERIODIC INSPECTIONS AND ADJUSTMENTS

INTRODUCTION

This chapter includes all information necessary to perform recommended inspections and adjustments. These preventive maintenance procedures, if followed, will ensure more reliable vehicle operation and a longer service life. The need for costly overhaul work will be greatly reduced. This information applies to vehicles already in service as well as new vehicles that are being prepared for sale. All service technicians should be familiar with this entire chapter.

PERIODIC MAINTENANCE/LUBRICATION INTERVALS

Unit: km (mi)

ITEM	REMARKS	BREAK-IN 1,000 (600)	EVERY 6,000 (4,000) or 6 months	EVERY 12,000 (8,000) or 12 months
Spark plug(s)	Check condition. Clean or replace if necessary.	○	○	○
Air filter	Clean. Replace if necessary.		○	○
Carburetor*	Check idle speed/synchronization/starter operation. Adjust if necessary.	○	○	○
Fuel line*	Check fuel hose and vacuum pipe for cracks or damage. Replace if necessary.		○	○
Transmission oil*	Check oil level/oil leakage. Correct if necessary. Replace every 24,000 (16,000) or 24 months. Warm engine before draining.	REPLACE	○	○
Autolube pump*	Check operation. Correct if necessary. Air bleeding.	○	○	○
YPVS system*	Check operation. Correct if necessary.	○	○	○
Brake*	Check operation/fluid leakage/See NOTE. Correct if necessary.		○	○
Clutch	Check operation. Adjust if necessary.		○	○
Rear arm pivot*	Check rear arm assembly for looseness. Correct if necessary. Lubricate.***	○	○	○
Rear suspension link pivots*	Check operation. Lubrictate.***	○	○	○
Wheels*	Check balance/damage/runout. Repair if necessary.		○	○
Wheel bearings*	Check bearing assembly for looseness/ damage. Replace if damaged.		○	○
Steering bearing*	Check bearing assembly for looseness. Correct if necessary. Moderately repack every 24,000 (16,000) or 24 months.**	○		○

PERIODIC MAINTENANCE/LUBRICATION INTERVALS

INSP ADJ

ITEM	REMARKS	BREAK-IN 1,000 (600)	EVERY 6,000 (4,000) or 6 months	EVERY 12,000 (8,000) or 12 months
Front forks*	Check operation/oil leakage. Repair if necessary.		○	○
Rear shock absorber*	Check operation/oil leakage. Repair if necessary.		○	○
Cooling system	Check coolant leakage. Repair if necessary. Replace coolant every 24,000 (16,000) or 24 months.		○	○
Drive chain	Check chain slack/alignment. Adjust if necessary. Clean and lube.	EVERY 500 (300)		
Fittings/Fasteners*	Check all chassis fittings and fasterners. Correct if necessary.	○	○	○
Sidestand*	Check operation. Repair if necessary.	○	○	○
Battery*	Check specific gravity. Check breather pipe for proper operation. Correct if necessary.		○	○

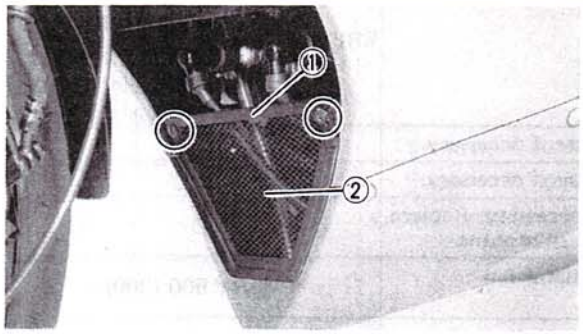
*: It is recommended that these item be serviced by a Yamaha dealer.
**: Medium weight wheel bearing grease.
***: Lithium soap base grease.

2

NOTE:

Brake fluid replacement:

1. When disassembling the master cylinder or caliper cylinder, replace the brake fluid. Normally check the brake fluid level and add the fluid as required.
2. On the inner parts of the master cylinder and caliper cylinder, replace the oil seals every two years.
3. Replace the brake hoses every four years, or if cracked or damaged.

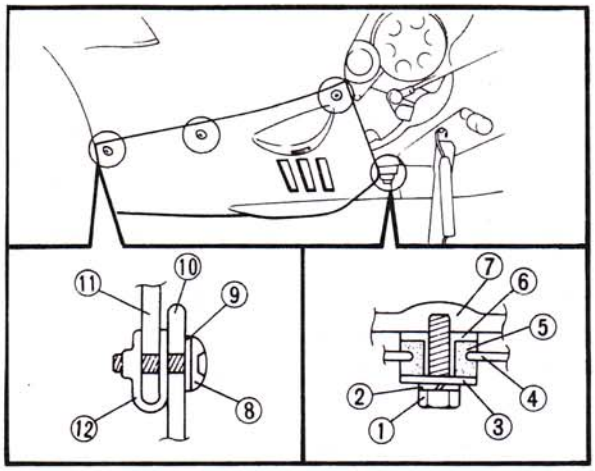


COWLING

LOWER COWLING

Removal

1. Remove:
   - Screws
   - Engine grille holder stay ①
   - Engine grille ②

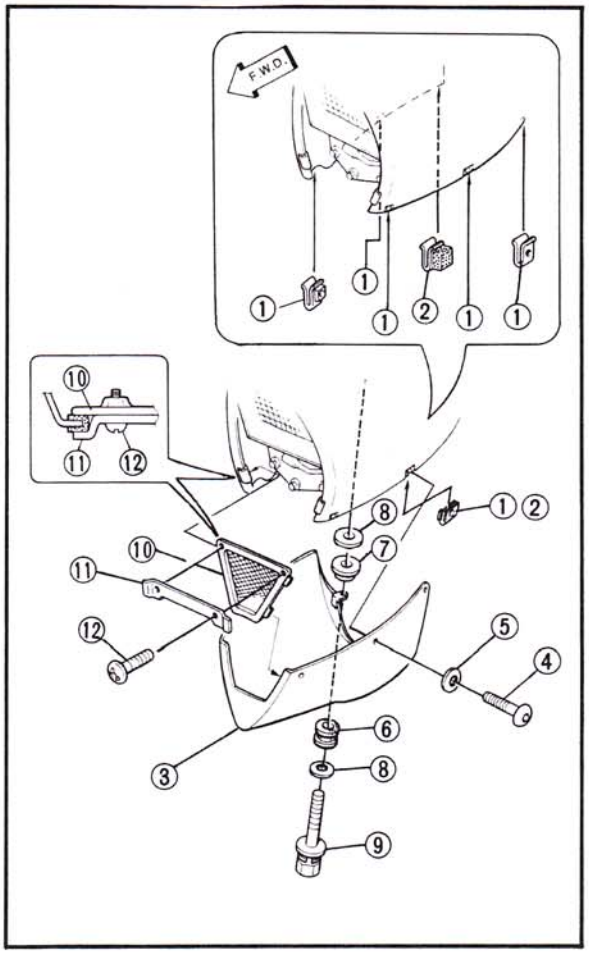


2. Remove:
   - Mounting bolts
   - Lower cowling ④, ⑩

NOTE:

Do not lose the plastic washers ⑨.

① Hexagon bolt
② Spring washer
③ Plain washer
④ Lower cowling
⑤ Grommet
⑥ Collar
⑦ Frame stay
⑧ Hexagon socket head bolt
⑨ Plastic washer
⑩ Lower cowling
⑪ Center cowling
⑫ Spring nut

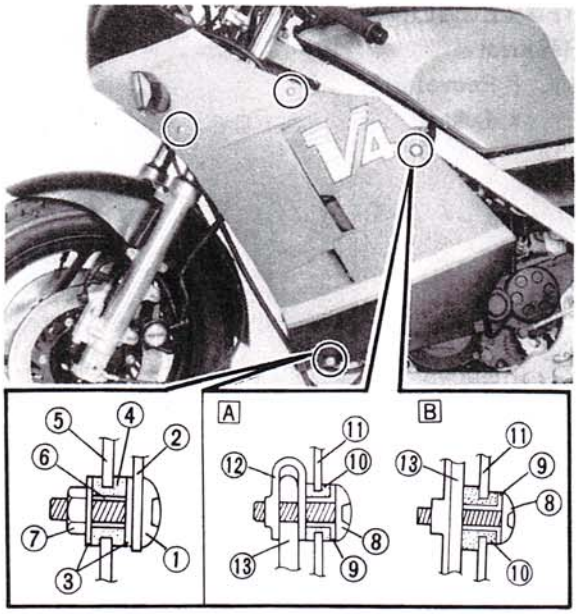


Installation

1. Install:
   - Lower cowling
   - Mounting bolts
2. Tighten:
   - Bolts

   Tighten the bolts evenly.
3. Install:
   - Engine grille

No.	Part name	Q'ty	Remarks mm (in)
①	Spring nut	5	d = 5 (0.20)
②	Spring nut (With damper)	1	d = 5 (0.20)
③	Lower cowling	1	
④	Hexagon socket head bolt	6	d = 5 (0.20), ℓ = 12 (0.47)
⑤	Plastic washer	6	d = 6 (0.24)
⑥	Grommet	2	Rubber
⑦	Collar	2	d = 6 (0.24)
⑧	Plain washer	4	d = 6 (0.24)
⑨	Hexagon bolt with spring washer and plain washer	2	d = 6 (0.24), ℓ = 20 (0.78)
⑩	Engine grille	1	
⑪	Holder stay	1	
⑫	Screw	2	d = 5 (0.20), ℓ = 12 (0.47)



CENTER COWLINGS

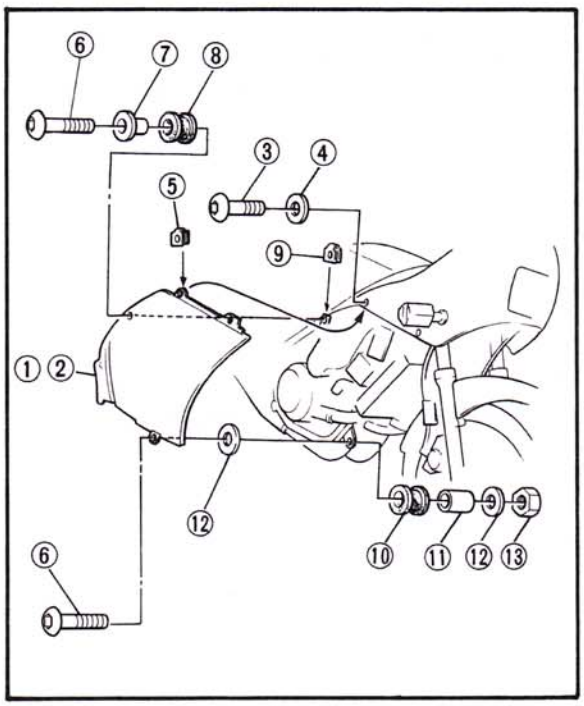
Removal

1. Remove:
   - Engine grille
   - Lower cowling
   - Mounting bolts
   - Center cowlings

NOTE:

Do not lose the spring nuts ⑫ and washers.

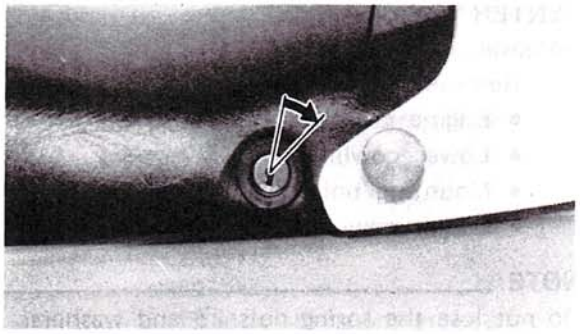
① Hexagon socket head bolt
② Center cowling
③ Plain washer
④ Grommet
⑤ Frame stay
⑥ Collar
⑦ Hexagon nut
⑧ Hexagon socket head bolt
⑨ Collar
⑩ Grommet
⑪ Center cowling
⑫ Spring nut
⑬ Air duct
A RIGHT SIDE
B LEFT SIDE



Installation

1. Install:
   - Center cowlings
   - Mounting bolts
     Tighten bolts evenly.
   - Lower cowling
   - Engine grille

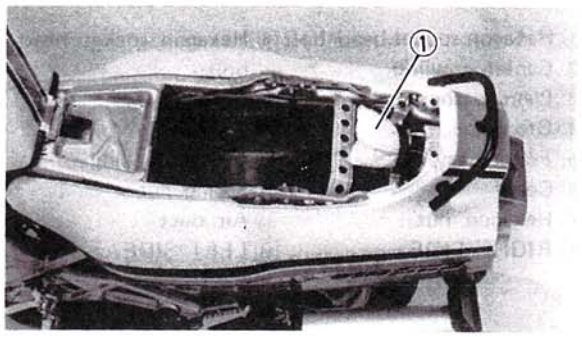
No.	Part name	Q'ty	Remarks mm (in)
①	Center cowling (Right)	1	
②	Center cowling (Left)	1	
③	Hexagon socket head bolt	4	d = 5 (0.20), ℓ = 12 (0.47)
④	Plain washer	4	d = 5 (0.20)
⑤	Spring nut	4	d = 5 (0.20)
⑥	Hexagon socket head bolt	4	d = 6 (0.24), ℓ = 22 (0.86)
⑦	Collar	2	d = 6 (0.24)
⑧	Grommet (Left and right)	2	Rubber
⑨	Spring nut (Right only)	1	d = 6 (0.24)
⑩	Grommet	2	Rubber
⑪	Collar	2	d = 6 (0.24)
⑫	Plain washer	4	d = 6 (0.24)
⑬	Hexagon nut	2	d = 6 (0.24)



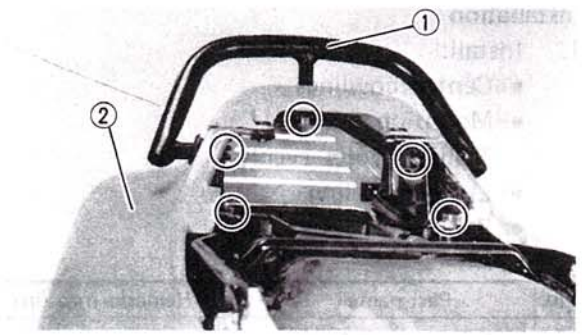
REAR COWLING

Removal

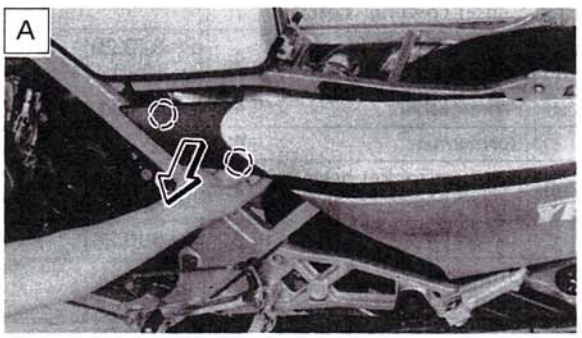
1. Remove:
   - Seat



2. Remove:
   - Tool kit ①

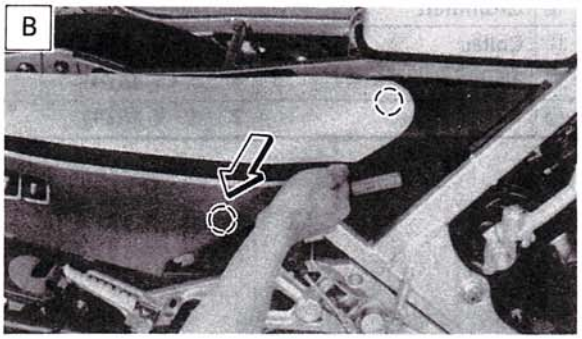


3. Remove:
   - Mounting bolts (Grab bar ①)
   - Mounting screws (Rear cowling ②)

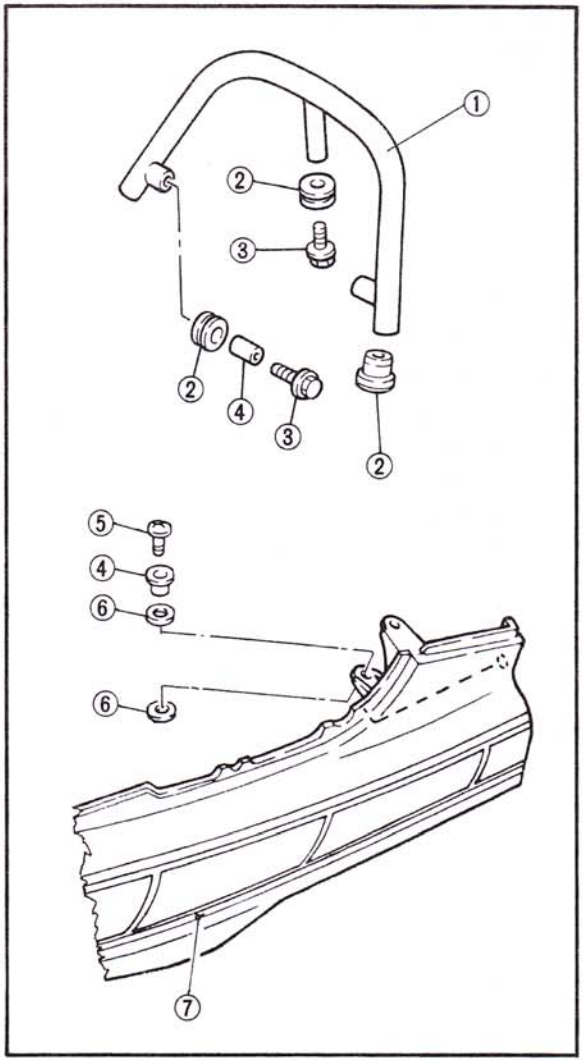


4. Unhook the rear cowling by simply pulling its front towards you.

A LEFT

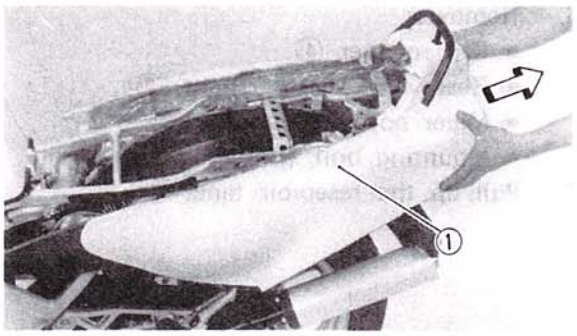


B RIGHT

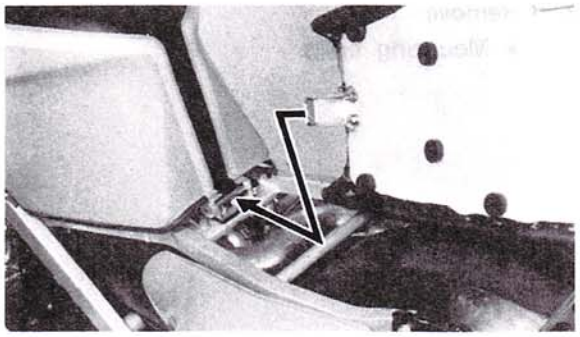


NOTE:
- Do not lose the collars ④ and gaskets ⑥.
- Inspect the cowling gaskets ⑥ and replace them if damaged.

① Grab bar
② Grommet
③ Bolt
④ Collar
⑤ Screw
⑥ Gasket
⑦ Rear cowling



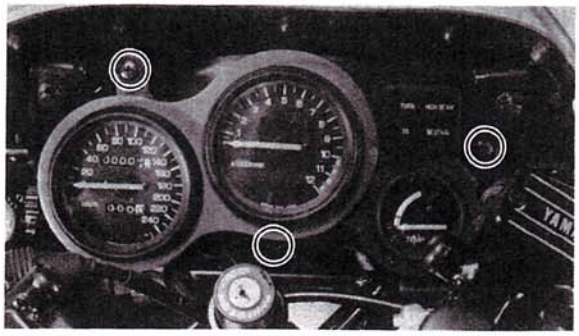
5. Remove:
   - Rear cowling assembly ①
   - Grab bar
     Remove together by pulling the grab bar rearwards.

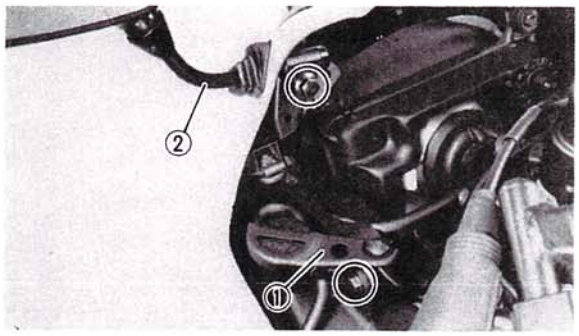


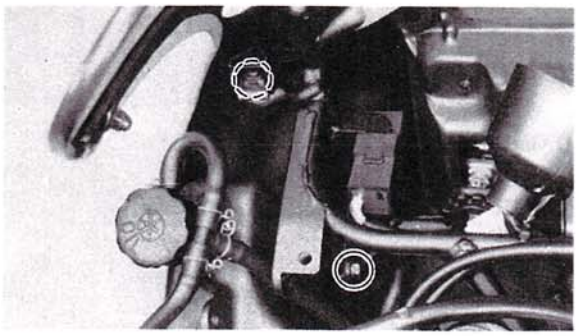
Installation

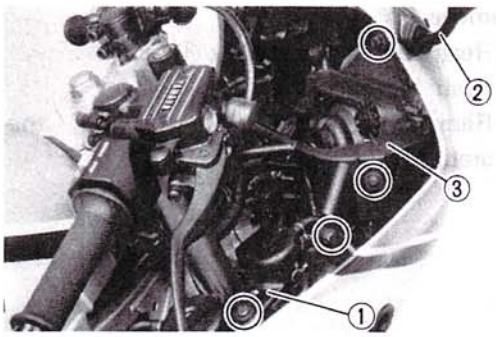
1. Install:
   - Rear cowling
     Reverse the removal procedure.
2. Tighten:
   - Mounting bolts (Grab bar)

	Grab Bar: **15 Nm (1.5 m·kg, 11 ft·lb)**





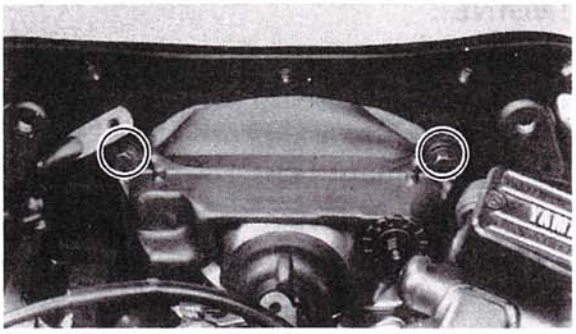




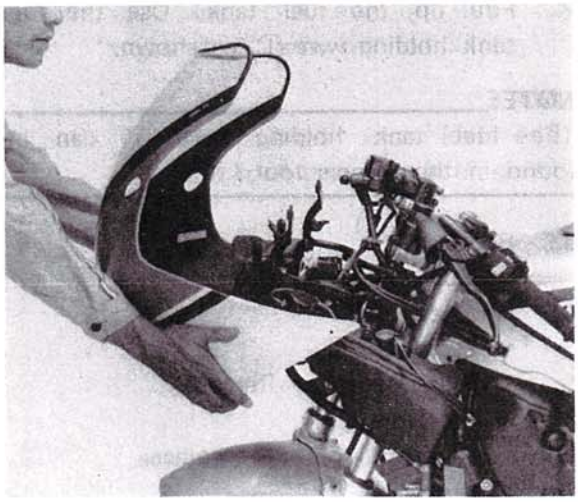
UPPER COWLING

Removal

1. Remove:
   - Lower cowling
   - Center cowlings
   - Meter assembly
2. Disconnect:
   - Flasher leads
   - Headlight connectors
   - Speedmeter cable
3. Remove:
   - Flasher lights
   - Cap retainer ①
   - Rear view mirror (Left) ②
   - Mounting bolt (Oil tank)
4. Pull up the oil tank.
5. Remove:
   - Mounting bolts
6. Remove:
   - Cap retainer ①
   - Rear view mirror (Right) ②
   - Meter cover ③
   - Mounting bolt (Reservoir tank)
7. Pull up the reservoir tank.
8. Remove:
   - Mounting bolts



9. Remove:
   - Mounting bolt

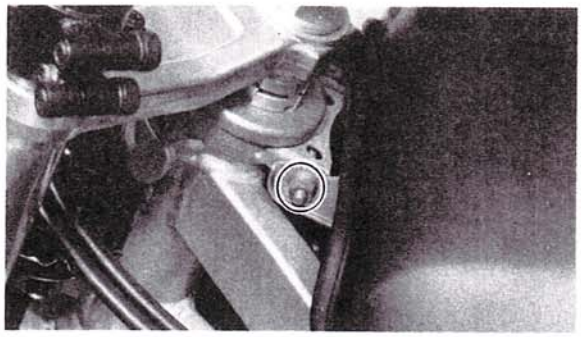


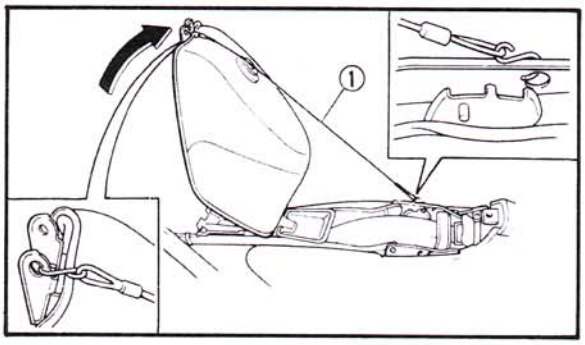
10. Remove:
    - Upper cowling

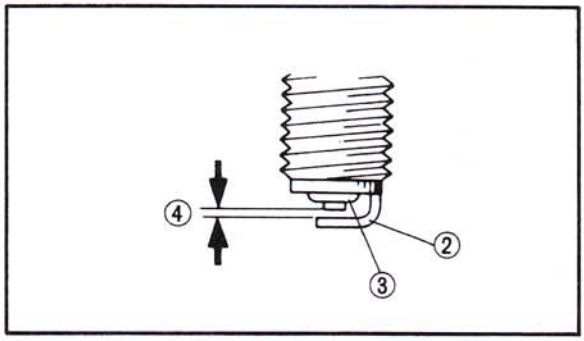
Installation

1. Install:
   - Upper cowling
   - Mounting bolts
2. Tighten:
   - Mounting bolts

   Tighten the mounting bolts evenly.
3. Install:
   - Flasher lights
   - Rear view mirrors
   - Meter assembly
4. Connect:
   - Meter light
   - Headlight
   - Flasher lights
   - Speedometer cable
5. Install:
   - Meter cover
   - Center cowlings
   - Lower cowling







ENGINE

SPARK PLUG

1. Remove:
   - Seat
   - Bolt (Fuel tank)

2. Pull up the fuel tank. Use the fuel tank holding wire ① as shown.

NOTE:
The fuel tank holding wire ① can be found in the owners tool kit.

3. Remove:
   - Spark plugs
4. Inspect:
   - Electrode ②
     Wear/Damage → Replace.
   - Insulator ③
     Abnormal color → Replace.
5. Measure:
   - Plug gap ④
     Use a Wire Gauge or Feeler Gauge.
     Out of specification → Regap.

Spark Plug Gap:
0.6 ~ 0.7 mm (0.024 ~ 0.028 in)

6. Clean the plug with a spark plug cleaner if necessary.

Standard Spark Plug:
BR9HS (NGK)
W27FSR (NIPPONDENSO)

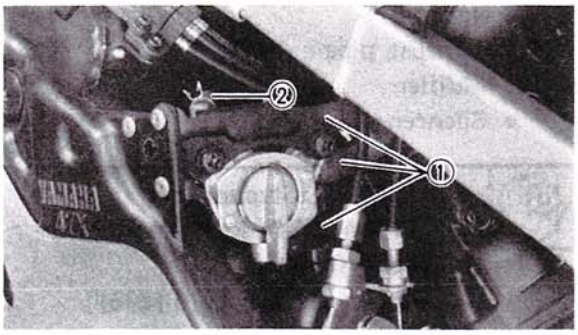
7. Tighten:
   - Spark plug(s)
     Before installing a spark plug, clean the gasket and plug surfaces.

Spark Plug:
20 Nm (2.0 m·kg, 14 ft·lb)

NOTE:
Finger-tighten the spark plug(s) before torquing to specification.

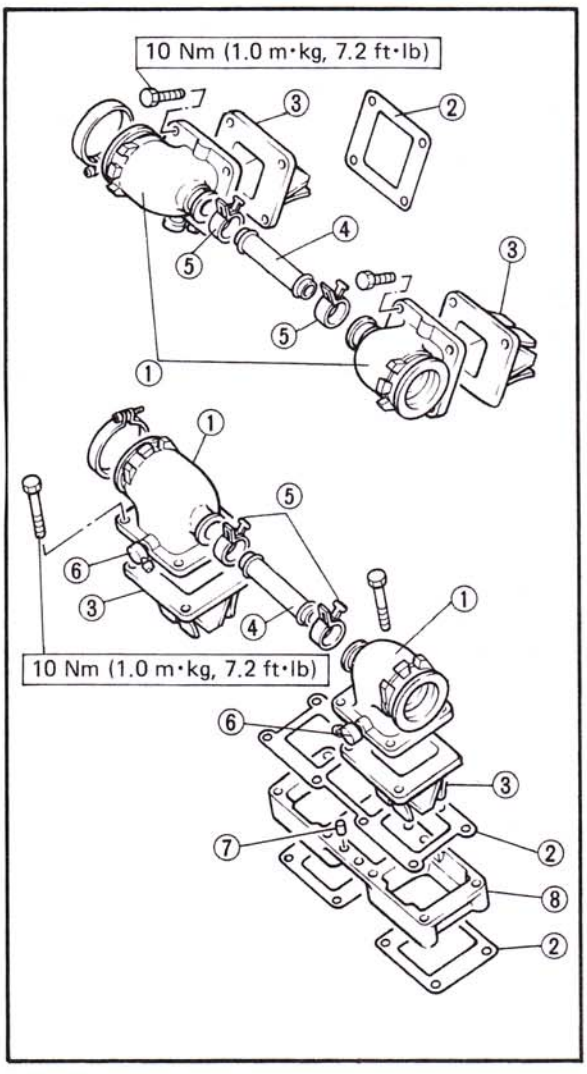
8. Install:
   - Fuel tank
   - Seat

	Fuel Tank: **10 Nm (1.0 m·kg, 7.2 ft·lb)**



FUEL LINE

1. Inspect:
   - Fuel hoses ①
   - Vacuum hose ②
     Cracks/Damage → Replace.

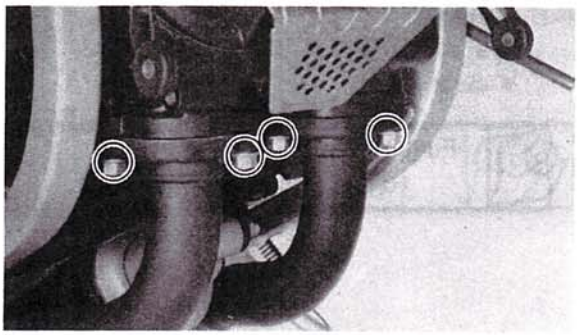


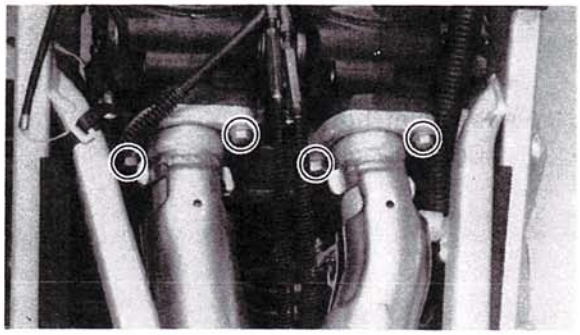
INTAKE MANIFOLD

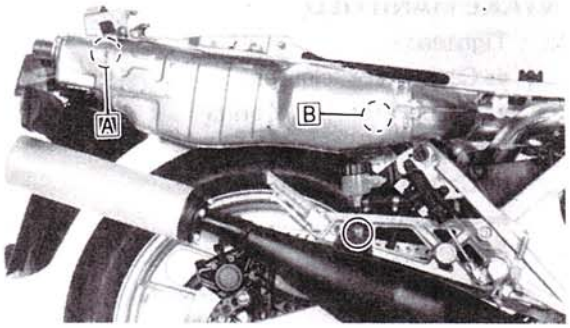
1. Tighten:
   - Carburetor clamps
   - Carburetor joint bolts
2. Inspect:
   - Carburetor joint ①
   - Gaskets ②
   - O-rings
     Cracks/Damage → Replace.

① Carburetor joint
② Gasket
③ Reed valve
④ Balancer pipe
⑤ Band
⑥ Delivery hose nozzle
⑦ Dowel pin
⑧ Housing

EXHAUST SYSTEM







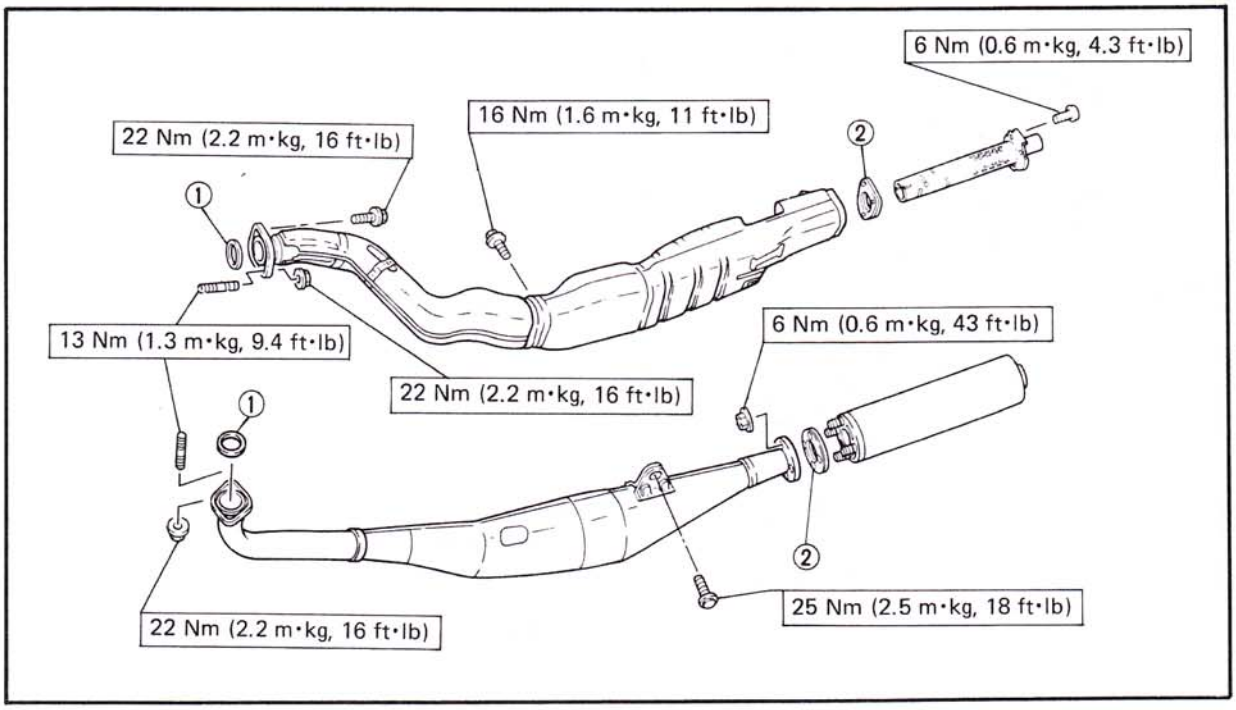
EXHAUST SYSTEM

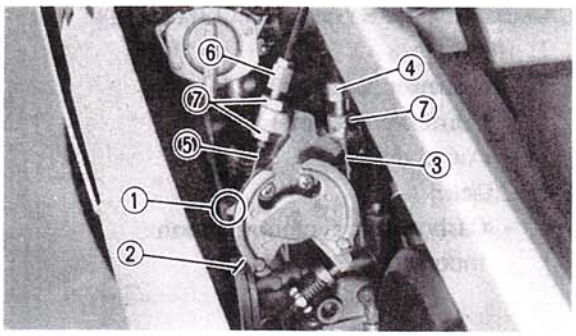
1. Inspect:
   - Exhaust pipe gasket(s) ①
   - Silencer gasket(s) ②
     Damage → Replace.
     Exhaust gas leakage → Repair.
   - Silencer
     Contamination → Clean.
     Damage → Replace.

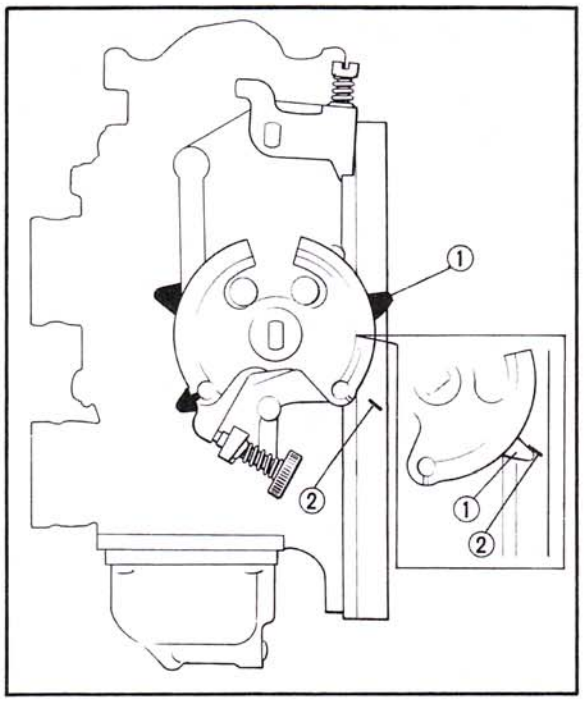
2. Tighten:
   - Exhaust pipe
   - Muffler
   - Silencer

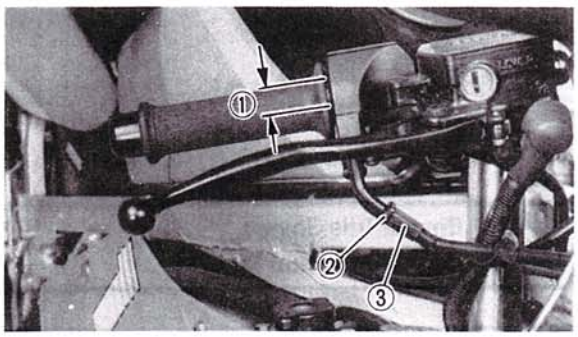
Exhaust Pipe (Studbolt):
13 Nm (1.3 m·kg, 9.4 ft·lb)
Muffler – Cylinder:
22 Nm (2.2 m·kg, 16 ft·lb)
Muffler – Muffler Bracket:
25 Nm (2.5 m·kg, 18 ft·lb)
Silencer (Nut/Screw):
6 Nm (0.6 m·kg, 4.3 ft·lb)

A Shorter bolt
B Longer bolt









THROTTLE CABLE ADJUSTMENT

Carburetors must be adjusted to open and close simultaneously.

1. Check:
   - Carburetor marks
     (at full throttle)
     Not aligned → Adjust the throttle cable.

Throttle cable adjustment steps (1):
- Turn the throttle grip until it stops completely so that all throttle valves are fully opened.
- While keeping the grip at this point (full throttle), check the carburetor pulley mark ① on each pair of carburetors. The pulley mark should align, as shown, with the full open mark ② on the carburetor body.
- If not, adjust the OPEN-SIDE throttle cable ③ by turning the adjuster ④ in or out.
- Next, check the CLOSE-SIDE throttle cables ⑤. They must have a slight free play. If not, adjust the close-side throttle cable by turning the adjuster ⑥ in or out.

⑦ Locknut

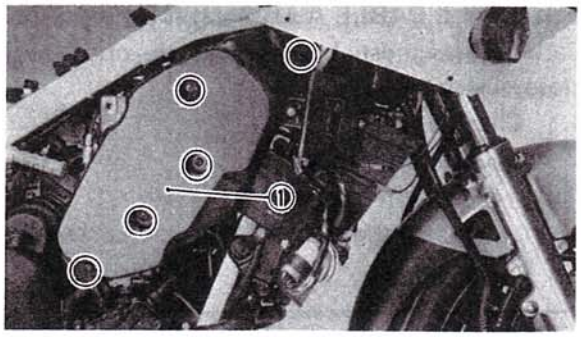
2. Check:
   - Throttle cable free play ①
     Out of specification → Adjust.

Throttle Cable Free Play ①:
3 ~ 7 mm (0.12 ~ 0.28 in)

3. Adjust:
   - Throttle cable free play

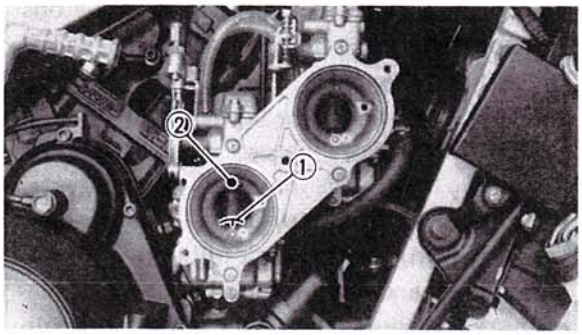
Throttle cable adjustment step (2):
- Loosen the adjuster locknut ②.
- Adjust the free play by turning the adjuster ③ in or out.
- Tighten the locknut.

CARBURETOR SYNCHRONIZATION/IDLE SPEED



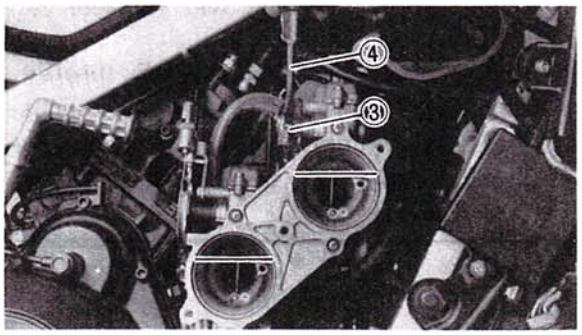
CARBURETOR SYNCHRONIZATION

1. Remove:
   - Lower cowling
   - Center cowlings
   - Air ducts ①
2. Check:
   - Carburetor synchronization
     Incorrect → Adjust.

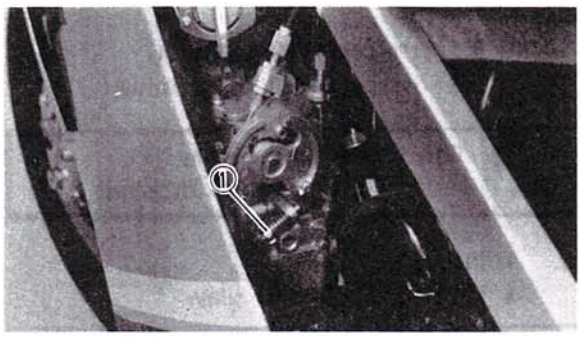


Carburetor synchronization adjustment steps:

- Slowly turn the throttle grip until the cutaway convex center of the throttle valve ① in the lower carburetor is flush with the carburetor bore top ②.
- While keeping the grip at this point, check the throttle valve position in the upper carburetor. This position must be the same as in the lower carburetor.
- If not, adjust the throttle valve in the upper carburetor by turning the synchronizing screw ③.
- Adjust the other carburetor in the same manner as in the above.



④ Screw driver



IDLE SPEED

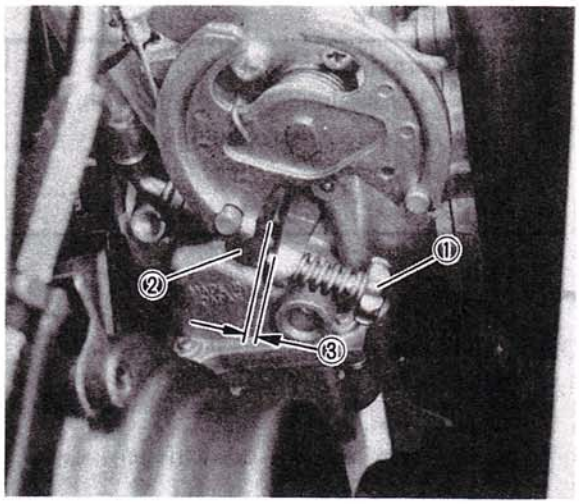
1. Adjust
   - Idle speed
     Warm up the engine and turn the throttle stop screw ① to adjust.

Engine Idle Speed:
1.250 r/min

Idle speed adjustment steps:

NOTE:

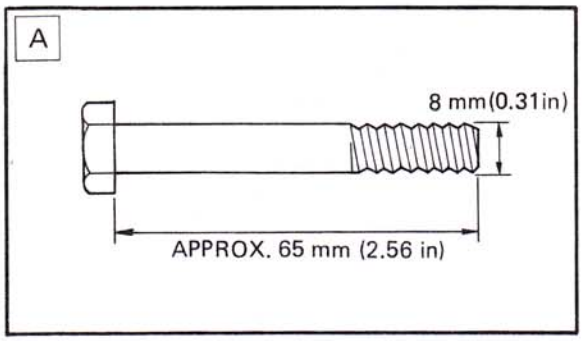
The throttle cables and synchronization must be set properly before adjusting the idle speed.



- Loosen both throttle stop screws until the stop screw ① and throttle pulley stopper ② have clearance ③ between them.
- Slowly turn the throttle stop screw until the stop screw end just contacts the throttle pulley stopper.
- Turn the other throttle stopper screw in the same manner as in the above.
- Warm up the engine and turn both throttle stop screws similtaneously by the same amount.
- Set the idle to the specified engine speed.

Engine Idle Speed:
1.250 r/min

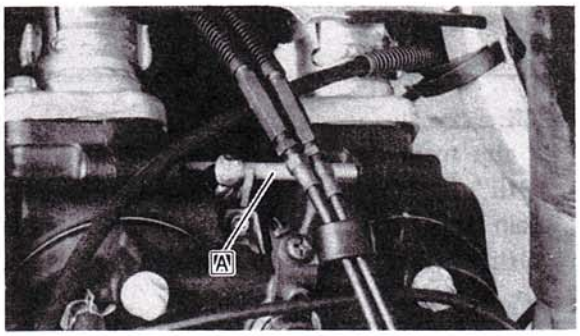
④ Screwdriver

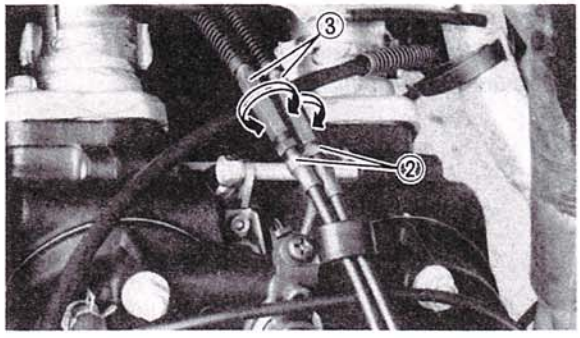


YPVS (YAMAHA POWER VALVE SYSTEM)

The YPVS operation can be heard in the following instances:

- When the main switch is turned on and the engine is started.
- When the engine stalls while the main switch is on.



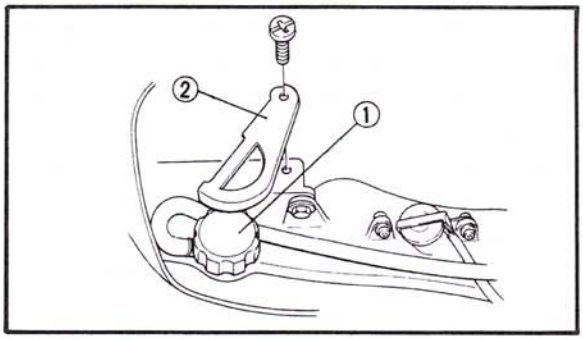


YPVS Adjustment

YPVS cable adjustment step:

- Turn the main switch on and wait for five(5) seconds; then, turn the main switch off.
- Insert the specified size of bolts A (as shown) into the cylinders to hold each of the YPVS's.
- Loosen the YPVS cable adjuster locknut ②.
- Turn the adjuster ③ clockwise until it stops completely; then, loosen the adjuster a half(1/2) turn.
- Tighten the adjuster locknut.
- Adjust the other cable in the same manner as in the above.
- Tighten the locknut.

ENGINE OIL



ENGINE OIL

Recommended Oil:
Yamalube 2-cycle oil or Air cooled 2-stroke engine oil
Oil Capacity:
2.0 L (1.8 Imp qt, 2.1 US qt)

① Oil tank filler cap
② Cap retainer

Oil Level Measurement

1. Check:
   - Oil level
     Oil level low → Add sufficient oil.

2

OIL LEVEL AND "OIL" LIGHT CHECKING METHOD

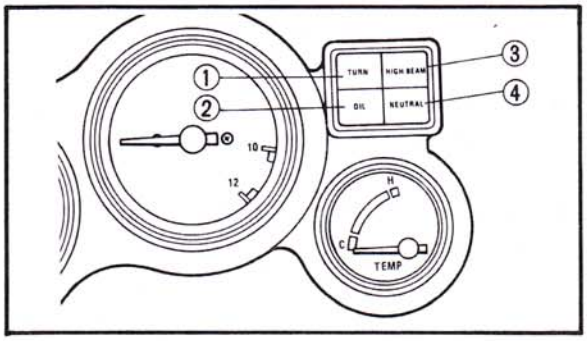
Main switch "ON".

"OIL" light does not come on. → See CHAPTER 7 "SIGNAL SYSTEM".

"OIL" light comes on. → Wait a few seconds.

* "OIL" light comes off. → Engine oil level and electrical circuit are OK.

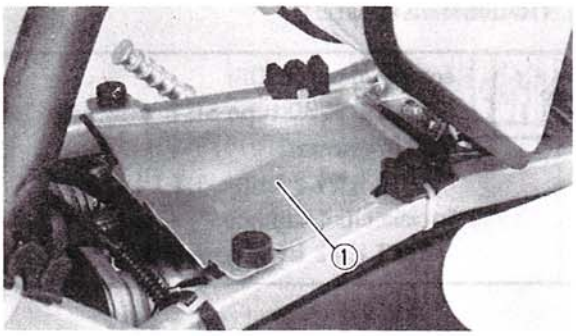
"OIL" light does not come off. → Add sufficient oil.

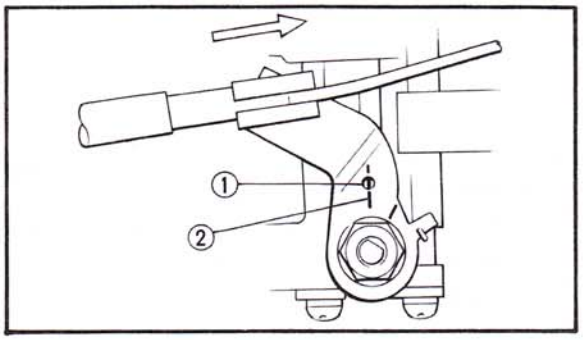


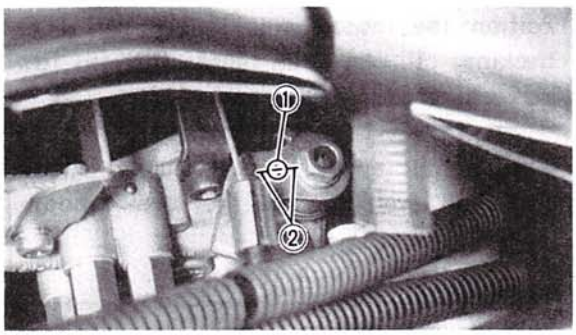
NOTE:

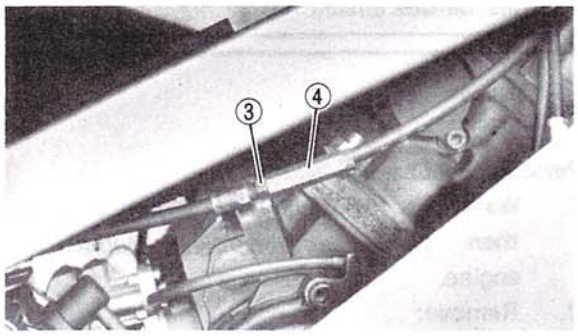
* If the main switch is turned off after the "OIL" light goes off and then immediately again the main switch is turned on, the "OIL" light may not come on. This is not because of failure.

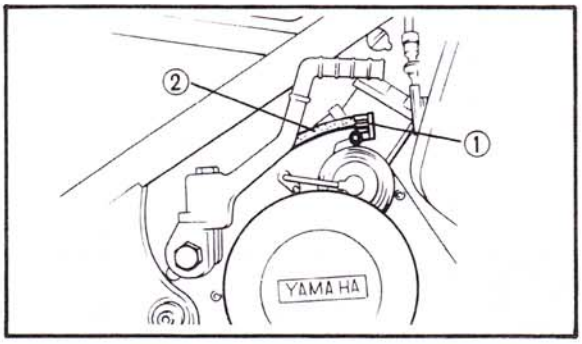
① "TURN" indicator light
② "OIL" warning indicator light
③ "NEUTRAL" indicator light
④ "HIGH BEAM" indicator light











OIL PUMP

Oil Pump Cable Adjustment

1. Remove:
   - Bolt (Fuel tank)
2. Pull up the fuel tank. Use the fuel tank holding wire.
3. Remove:
   - Heat protector ①
4. Turn the main switch on.
5. Check:
   - Oil pump control position
     Not aligned → Adjust.

Oil pump cable adjustment steps:

- Turn the main switch on.
- Twist the throttle grip a little so that the throttle cable has no free play.
- In this case, the control lever hole center ① should be aligned with the mark on the oil pump ②.
- If not, loosen the oil pump cable adjuster locknut ③ and turn the adjuster ④ for the above alignment.
- Tighten the cable locknut.

Air Bleeding

The oil pump (engine oil) and delivery lines must be bled on the following occasions:

- Setting up a new motorcycle out of the crate.
- Whenever the oil tank has run dry.
- Whenever any portion of the engine oil system is disconnected.

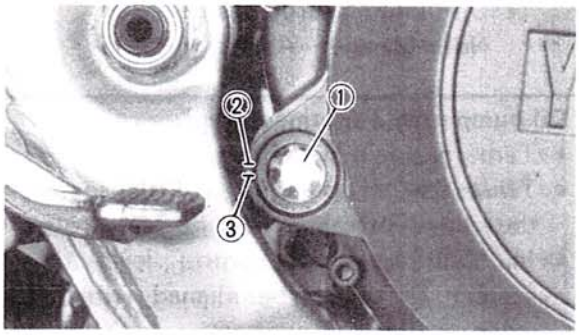
Air bleeding steps:

- Remove the clip ①, and disconnect the bleed pipe ②.
- Keep the oil running out until air bubbles disappear.
- When air bubbles are expelled completely, connect the pipe. Then, secure the pipe with the clip.

2

TRANSMISSION OIL

Recommended Oil:
SAE 10W30 type SE motor oil
Total Amount:
1.6 L (1.4 Imp qt, 1.7 US qt)
Periodic Oil Change:
1.5 L (1.3 Imp qt, 1.6 US qt)



Oil Level Measurement

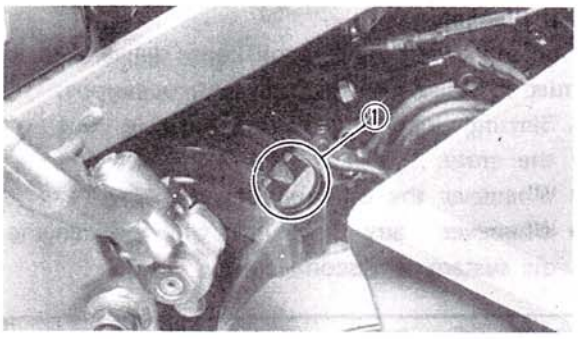
1. Check:
   - Oil level
     Oil level low → Add sufficient oil.

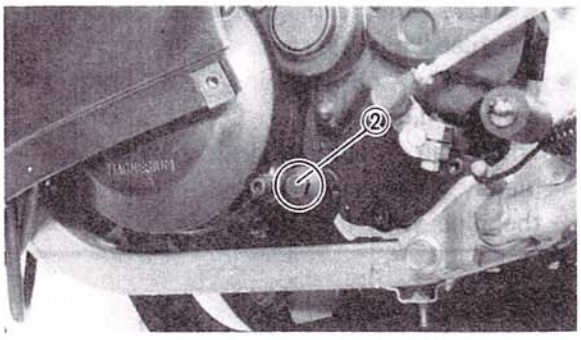
Oil level visual inspection steps:
- Place the motorcycle on a level surface and warm up the engine for several minutes.

NOTE:
Position the motorcycle straight up when checking oil level, a slight tilt to the side can produce false readings.

- Stop the engine and visually check the oil level through the level window ①.

NOTE:
Wait several minutes until the oil level settles before checking.





② Maximum
③ Minimum

Periodic Oil Change

1. Warm up the engine for several minutes, then place a receptacle under the engine.
2. Remove:
   - Lower cowling
   - Oil filler cap ①
3. Remove:
   - Drain plug ②
     Drain the transmission oil.
4. Tighten:
   - Drain plug ②

Drain Plug:
22 Nm (2.2 m·kg, 16 ft·lb)

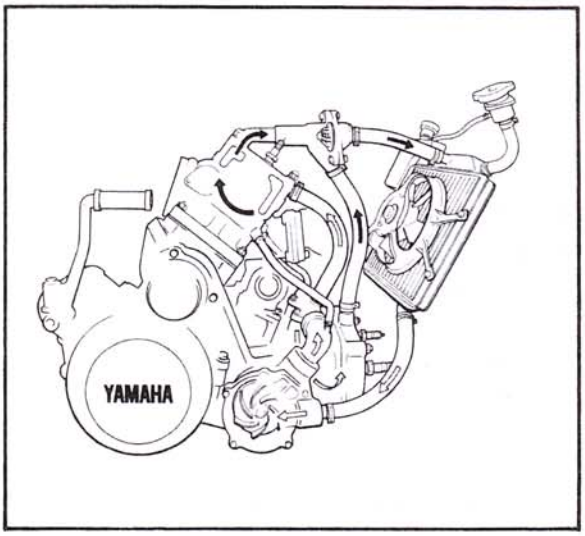
5. Fill:
   - Crankcase

	Transmission Oil: 1.5 L (1.3 Imp qt, 1.6 US qt)

CAUTION:

Do not allow foreign material to enter the crankcase.

6. Install:
   - Filler cap
   - Lower cowling



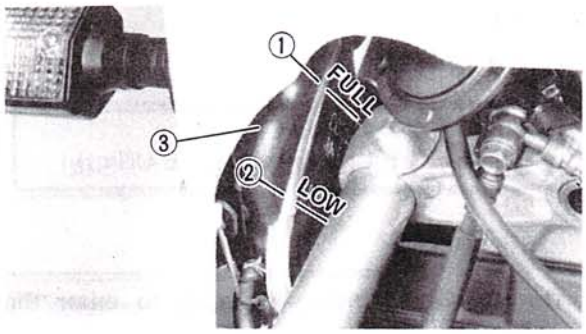
COOLANT

	Recommended Coolant: High Quality Ethylene Glycol Anti-freeze Containing Anti-corrosion for Aluminum Engine Inhibitors Coolant and Water Mixed Ratio: 50%/50% Total Amount: 1.95 L (1.72 Imp qt, 2.06 US qt) Reservoir Tank Capacity: 0.35 L (0.31 Imp qt, 0.37 US qt) From "LOW" to "FULL" Level: 0.25 L (0.22 Imp qt, 0.26 US qt)

WARNING:

Do not remove the radiator cap when the engine and radiator are hot. Scalding hot fluid and steam may be blown out under pressure, which could cause serious injury.
When the engine has cooled, open the radiator cap by the following procedure: Place a thick rag, like a towel, over the radiator cap, slowly rotate the cap counterclockwise to the detent. This procedure allows any residual pressure to escape. When the hissing sound has stopped, press down on the cap while turning counterclockwise and remove it.

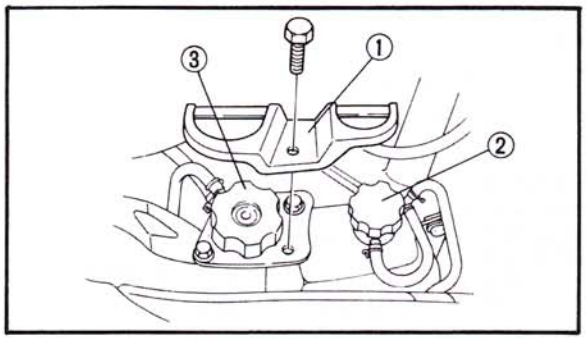
CLUTCH ADJUSTMENT



Coolant Level Check

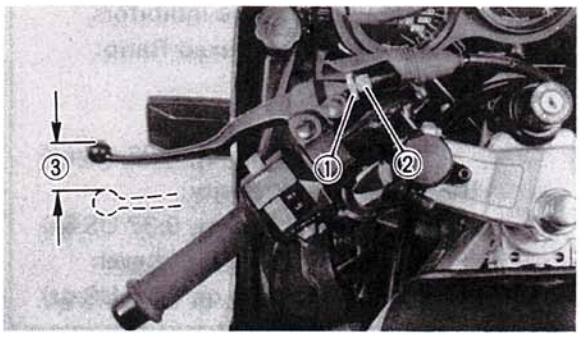
1. Check:
   - Coolant level
     Coolant level low → Add sufficient coolant.

① "FULL" level
② "LOW" level
③ Reservoir tank



2. Remove:
   - Cap retainer ①
   - Reservoir tank cap ②
3. Add:
   - Coolant

③ Radiator cap



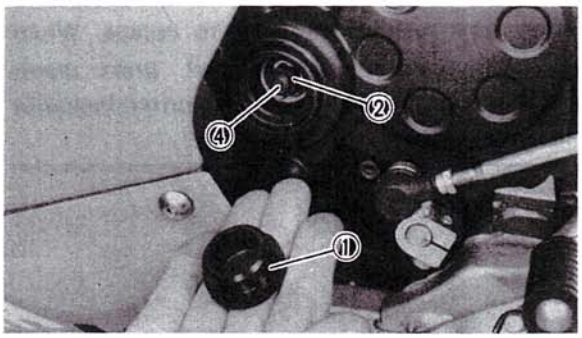
CLUTCH ADJUSTMENT

Clutch Lever Free Play Adjustment

1. Loosen:
   - Adjuster locknut ①
2. Adjust:
   - Free play ③
     Turn the adjuster ② clockwise or counterclockwise until proper lever free play is attained.

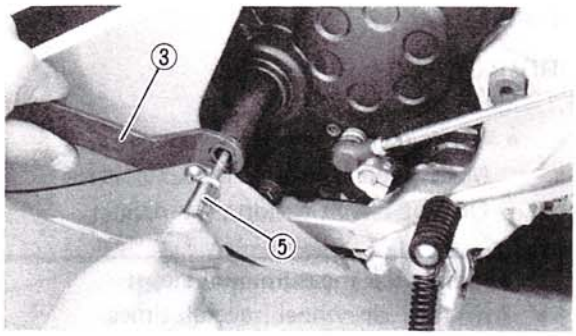
Clutch Lever Free Play ③:
8 ~ 12 mm (0.31 ~ 0.47 in)

3. Tighten:
   - Locknut



Mechanism Adjustment

1. Loosen:
   - Clutch cable
2. Remove:
   - Adjuster cover ①
3. Loosen:
   - Locknut ②
     Use the Clutch Adjusting Tool (90890-01204) ③

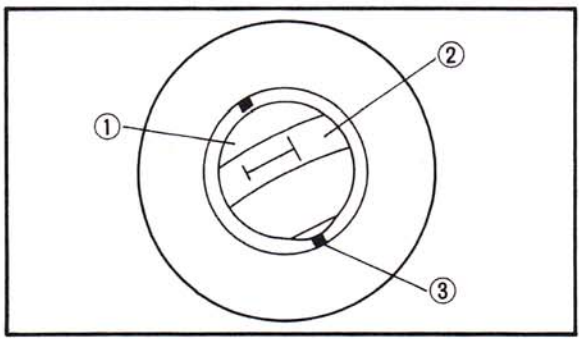


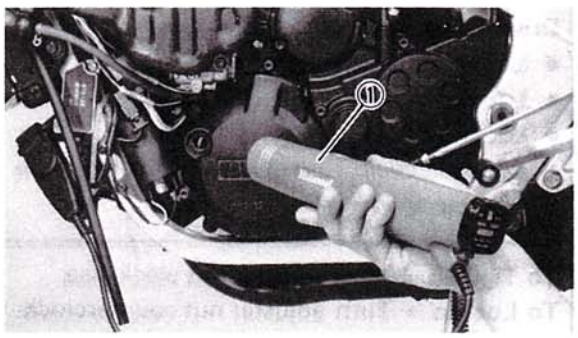
4. Rotate:
   - Adjuster ④
     Turn it clockwise until it lightly seats against clutch push rod; then, return the adjuster a quater(1/4) turn.

NOTE:
Be sure the screw contacts push rod firmly but lightly.

5. Tighten:
   - Locknut

⑤ Screwdriver





IGNITION TIMING CHECK

① Timing window
② Firing range for No. 2 and No. 3 cylinder
③ Stationary pointer on crankcase cover

1. Remove:
   - Lower cowling
   - Center cowling (Left)
   - Timing plug
2. Check:
   - Ignition timing

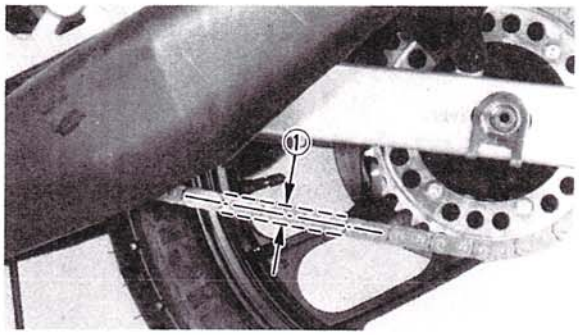
Ignition timing check steps:
- Connect the Timing Light (90890-03109) ① to No. 2 or No. 3 cylinder spark plug lead.
- Warm up the engine and let it idle at the specified idle speed of 1,250 r/min.
- Visually check the stationary pointer in the timing window to verify it is within the required firing range indicated on the flywheel.

Incorrect firing range → Check timing plate and/or pickup assembly (tightness damage)
Refer to CHAPTER 7. "ELECTRICAL" for further information.

CHASSIS

DRIVE CHAIN

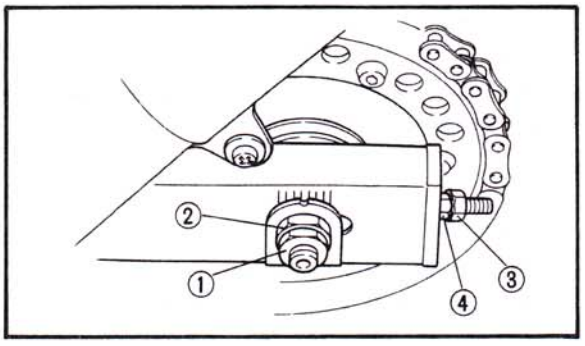
1. Measure:
   - Drive chain slack
     Motorcycle is on a level surface.
     Out of specification → Adjust.



Drive chain slack measurement steps:
- Turn the rear wheel several times.
- Check the chain slack several times to find the point where the chain is the tightest.
- Check the chain slack when the wheel is in this "tight chain" position.

Drive Chain Slack ①:
15 ~ 20 mm (0.6 ~ 0.8 in)

- If the chain slack exceeds 20 mm (0.8 in), adjust the chain slack.



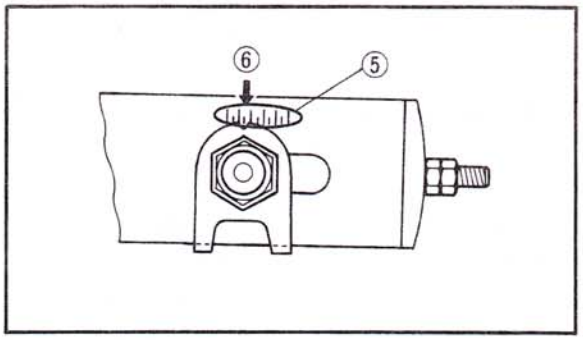
Drive chain slack adjustment steps:
- Loosen the axle locknut ①
- Loosen the axle nut ②
- Loosen the locknuts ③
- Adjust chain slack by turning the adjuster unit ④.

To Tighten → Turn adjuster nut clockwise.
To Loosen → Turn adjuster nut counterclockwise and push wheel forward.

- Turn each nut exactly the same amount to maintain correct axle alignment.

CAUTION:

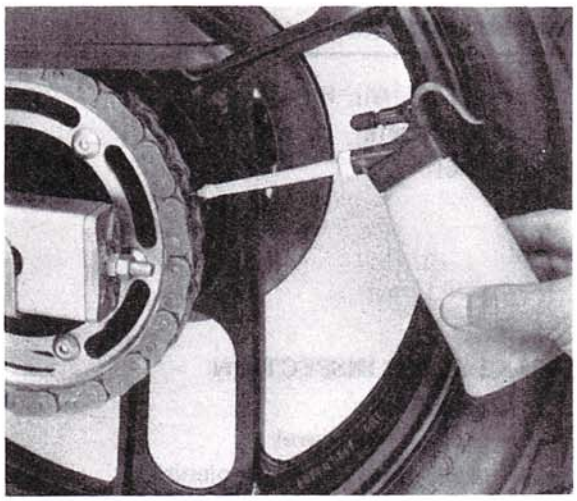
Excessive chain slack will overload the engine and other vital parts; keep the slack within the specified limits.



(There are marks on each side of the swingarm ⑤ and on each chain puller alignment.)

- Check the alignment mark. If the alignment mark exceeds wear limit ⑥, replace the sprockets and drive chain as a set.
- Tighten the axle nut and locknuts.

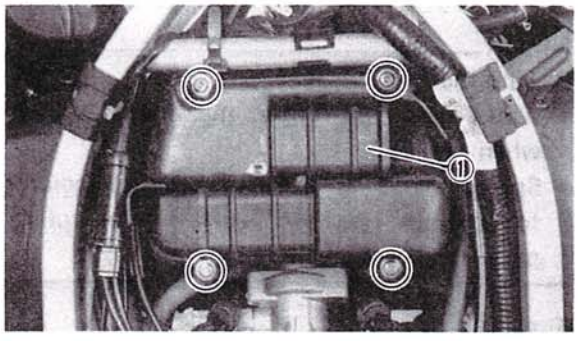
Axle Nut:
105 Nm (10.5 m·kg, 75 ft·lb)
Locknut:
60 Nm (6.0 m·kg, 43 ft·lb)



Drive Chain Lubrication

The chain consists of many parts which work against each other. If the chain is not maintained properly, it will wear out rapidly, therefore, form the habit of periodically servicing the chain. This service is especially necessary when riding in dusty conditions.

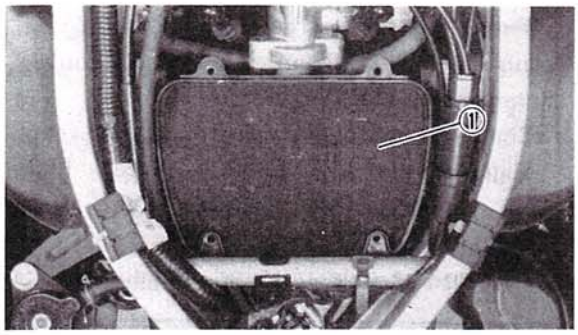
This motorcycle has a drive chain with small rubber O-rings between the chain plates. Steam cleaning, high-pressure washes, and certain solvents can damage these O-rings. Use only kerosene to clean the drive chain. Wipe it dry, and thoroughly lubricate it with SAE 30 ~ 50W motor oil. Do not use any other lubricants on the drive chain. They may contain solvents that could damage the O-rings.



AIR FILTER

1. Remove:
   - Seat
   - Bolt (Fuel tank)
2. Pull up the fuel tank.
3. Remove:
   - Cover (Air filter) ①

BRAKE FLUID INSPECTION



4. Remove:
   - Element ①

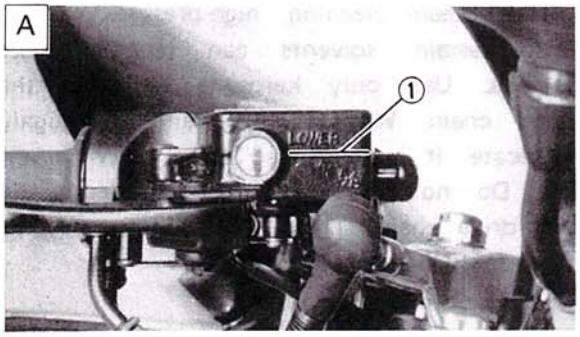
Air cleaner element cleaning steps:
- Clean the element with solvent.
- After cleaning, remove the remaining solvent by squeezing the element.
- Apply Yamalube 2-cycle oil or air-cooled 2-stroke engine oil to the entire surface of the element and squeeze out the excess oil.

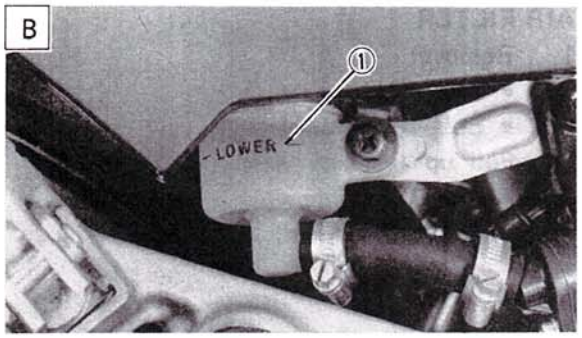
NOTE:
The element should be wet but not dripping.

5. Install:
   - Element

CAUTION:
Make sure the element edge fits into the corresponding filter case groove.

- Cover (Air filter)
- Fuel tank
- Seat





BRAKE FLUID INSPECTION

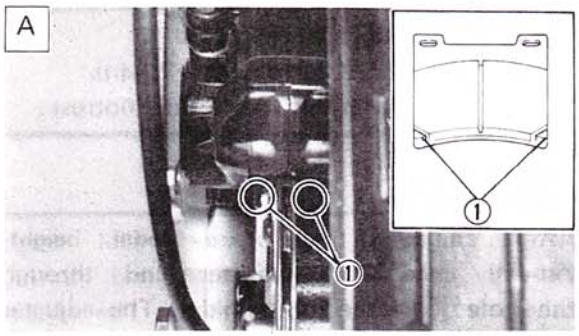
1. Check:
   - Brake fluid level
     Low level ① → Replenish.

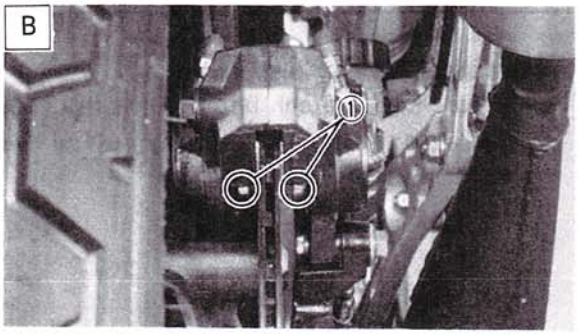
NOTE:
Use only a designated, quality fluid.

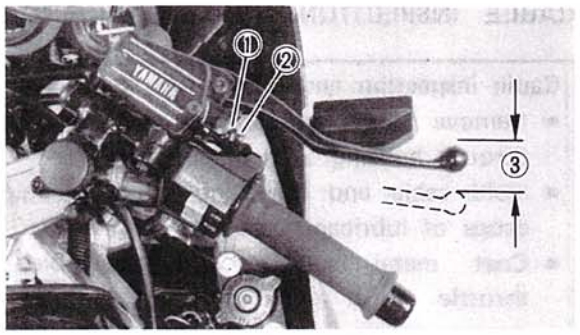
Brake Fluid:
DOT NO. 3

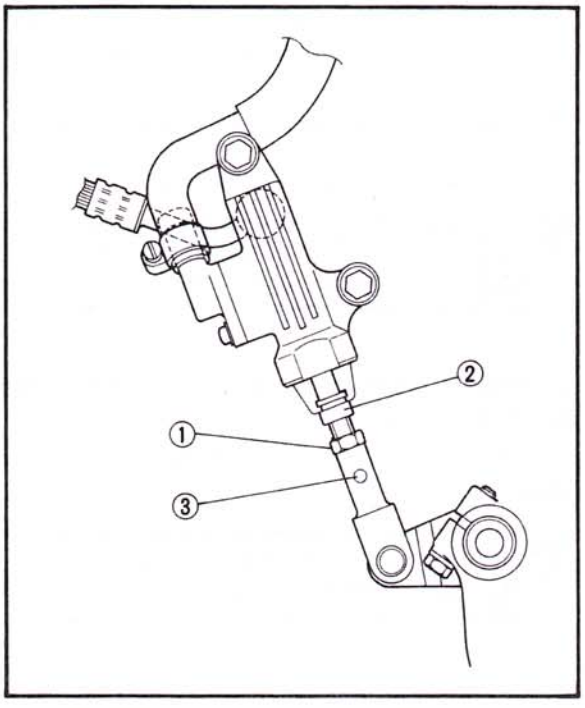
NOTE:
Be sure that:
- Water does not enter the master cylinder when refilling.
- Spilled fluid is cleaned up immediately to prevent painted surfaces or plastic parts from eroding.

[A] FRONT BRAKE
[B] REAR BRAKE









FRONT AND REAR BRAKE PAD INSPECTION

1. Activate the brake lever or brake pedal.
2. Inspect:
   - Wear indicator ①
     Indicator almost contacts disc → Replace pads.
     Refer to CHAPTER 6, "CHASSIS."

Ⓐ FRONT BRAKE
Ⓑ REAR BRAKE

FRONT BRAKE

Front Brake Lever Free Play Adjustment

1. Loosen:
   - Adjuster locknut ①
2. Adjust:
   - Free play
     Turn the adjuster ② until the free play ③ is within the specified limits.

Brake Lever Free Play ③:
1 ~ 2 mm (0.04 ~ 0.08 in)

CAUTION:

Proper lever free play is essential to avoid excessive brake drag.

3. Tighten:
   - Adjuster locknut

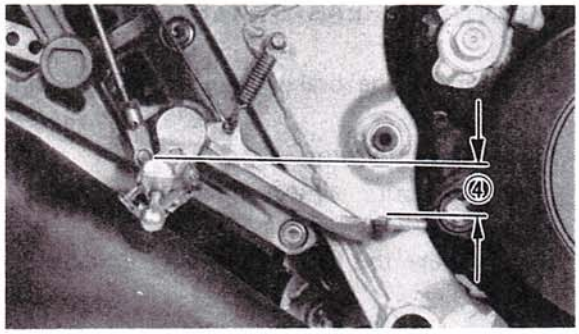
REAR BRAKE

Rear Brake Pedal Height Adjustment

1. Loosen:
   - Adjuster lock nuts ①
2. Adjust:
   - Brake pedal height
     Turn the adjuster ② until the brake pedal position is at the specified height.

③ Hole

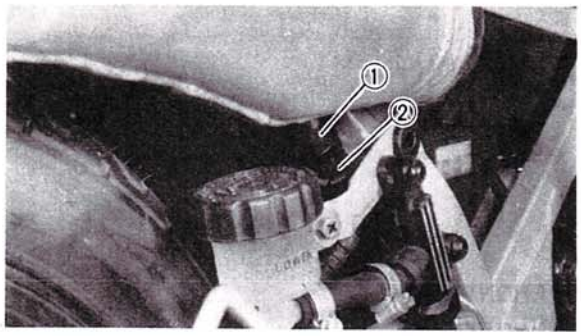
CABLE INSPECTION AND LUBRICATION/ PEDALS AND LEVERS



Brake Pedal Height ④ :
50 ~ 60 mm (2.0 ~ 2.4 in)
Below the Top of the Footrest

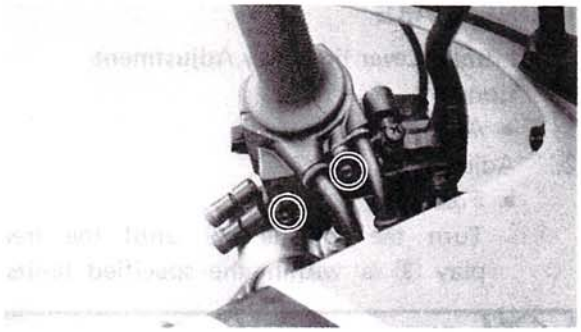
WARNING:

After adjusting the brake pedal height, visually check the adjuster end through the hole ③ of the joint holder. The adjuster end must appear within this hole.



Brake Light Switch Adjustment

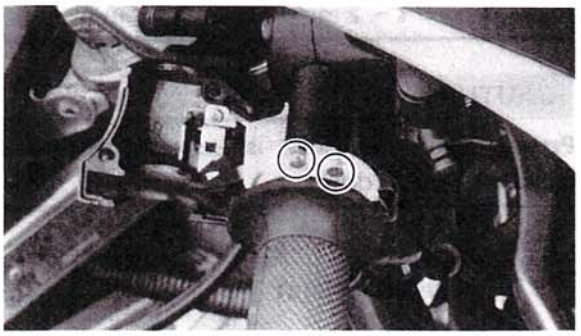
1. Hold the switch body ① with your hand so that it does not rotate and turn the adjusting nut ② .



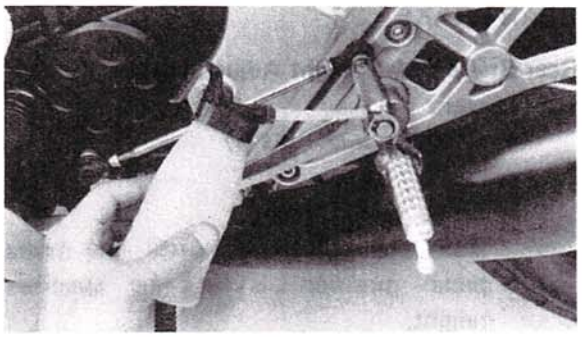
CABLE INSPECTION AND LUBRICATION

Cable inspection and lubrication steps:

- Remove the two screws that secure throttle housing to handlebar.
- Hold cable end high and apply several drops of lubricant to cable.
- Coat metal surface of disassembled throttle twist grip with suitable all-purpose grease to minimize friction.
- Check for damage to cable insulation. Replace any corroded or obstructed cables.
- Lubricate any cables that do not operate smoothly.



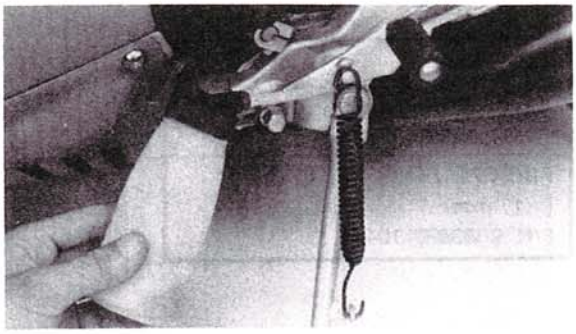
Yamaha Chain and Cable Lube or SAE 10W30 Motor Oil



BRAKE AND CHANGE PEDALS/BRAKE AND CLUTCH LEVERS

Lubricate pivoting parts of each lever and pedal.

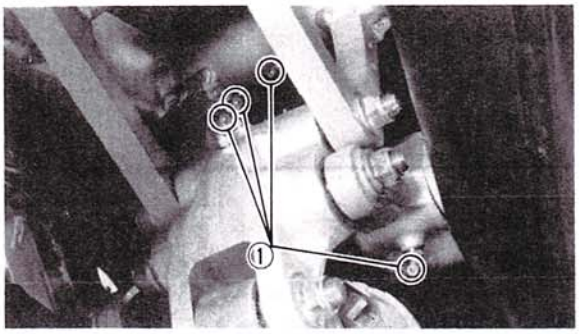
Yamaha Chain and Cable Lube or SAE 10W30 Motor Oil



SIDESTAND

Lubricate sidestand pivot point.

	Yamaha Chain and Cable Lube or SAE 10W30 Motor Oil



SWINGARM AND RELAY ARM

Lubricate the swingarm and relay arms at their pivoting points.

	Lightweight Lithium-soap Base Grease

① Grease nipple

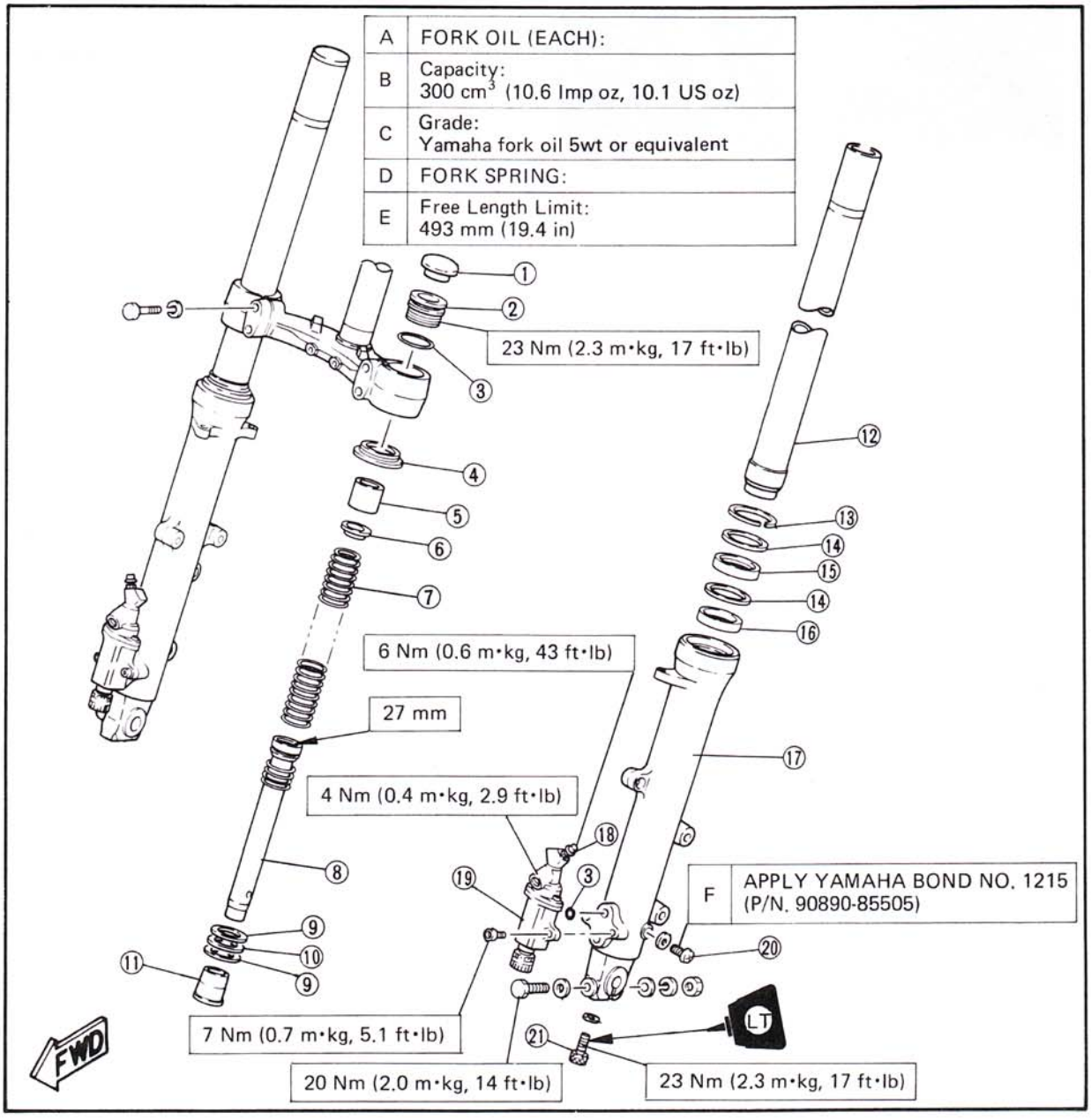
FRONT FORK OIL CHANGE

FRONT FORK OIL CHANGE

1. Fork cap
2. Cap bolt
3. O-ring
4. Dust seal
5. Collar
6. Spring seat
7. Fork spring
8. Damper rod
9. Wave washer
10. Washer
11. Taper spindle
12. Inner fork tube
13. Circlip
14. Washer
15. Oil seal
16. Guide bushing
17. Outer fork tube
18. Plunger case
19. Anti-dive
20. Drain screw
21. Damper rod assembly bolt

T-HANDLE: P/N. 90890-01326 DAMPER ROD HOLDER (#27 mm) P/N. 90890-01388
FRONT FORK CAP SOCKET (# 17 mm) P/N. 90890-01104

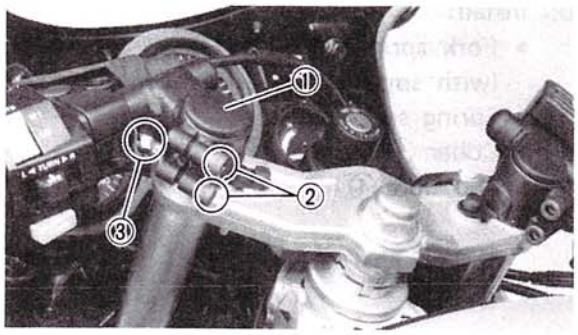
2



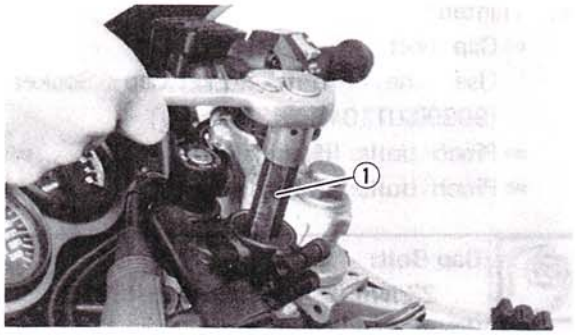
1. Remove:
   - Lower cowling
2. Place the motorcycle on a block or other suitable stand ① under the frame.

WARNING:

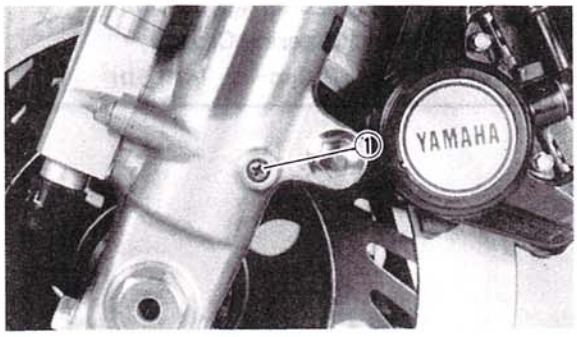
Securely support the motorcycle so there is no danger of it falling over.



3. Remove:
   - Fork caps ①
4. Loosen:
   - Pinch bolts (Handlebar) ②
   - Pinch bolts (Steering crown) ③



5. Remove:
   - Cap bolt
     Use the Front Fork Cap Socket (90890-01104) # 17 mm ①.
   - Collar
   - Spring seat
   - Fork spring



6. Remove:
   - Drain screws ①
     Drain the fork oil.

WARNING:

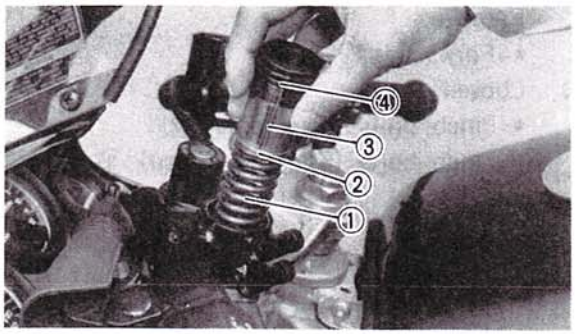
Do not allow any oil to contact the disc brake components. If oil is discovered be sure to remove it, otherwise diminished braking capacity and damage to the rubber components of the brake assembly will occur.

7. Inspect:
   - O-ring ①
   - Gasket (Drain screw)
     Wear/Damage → Replace.
8. Install:
   - Drain screws

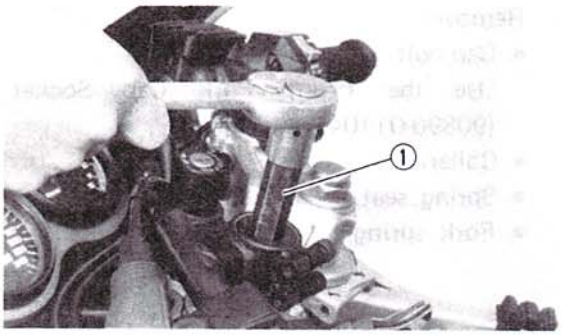
9. Fill:
   - Front forks

Each Fork:
300 cm³ (10.6 Imp oz, 10.1 US oz)
Yamaha Fork Oil 5wt or equivalent

After filling, pump the forks slowly up and down to distribute the oil.



10. Install:
    - Fork spring ①
      (with smaller pitch side up)
    - Spring seat ②
    - Collar ③
    - Cap bolt ④

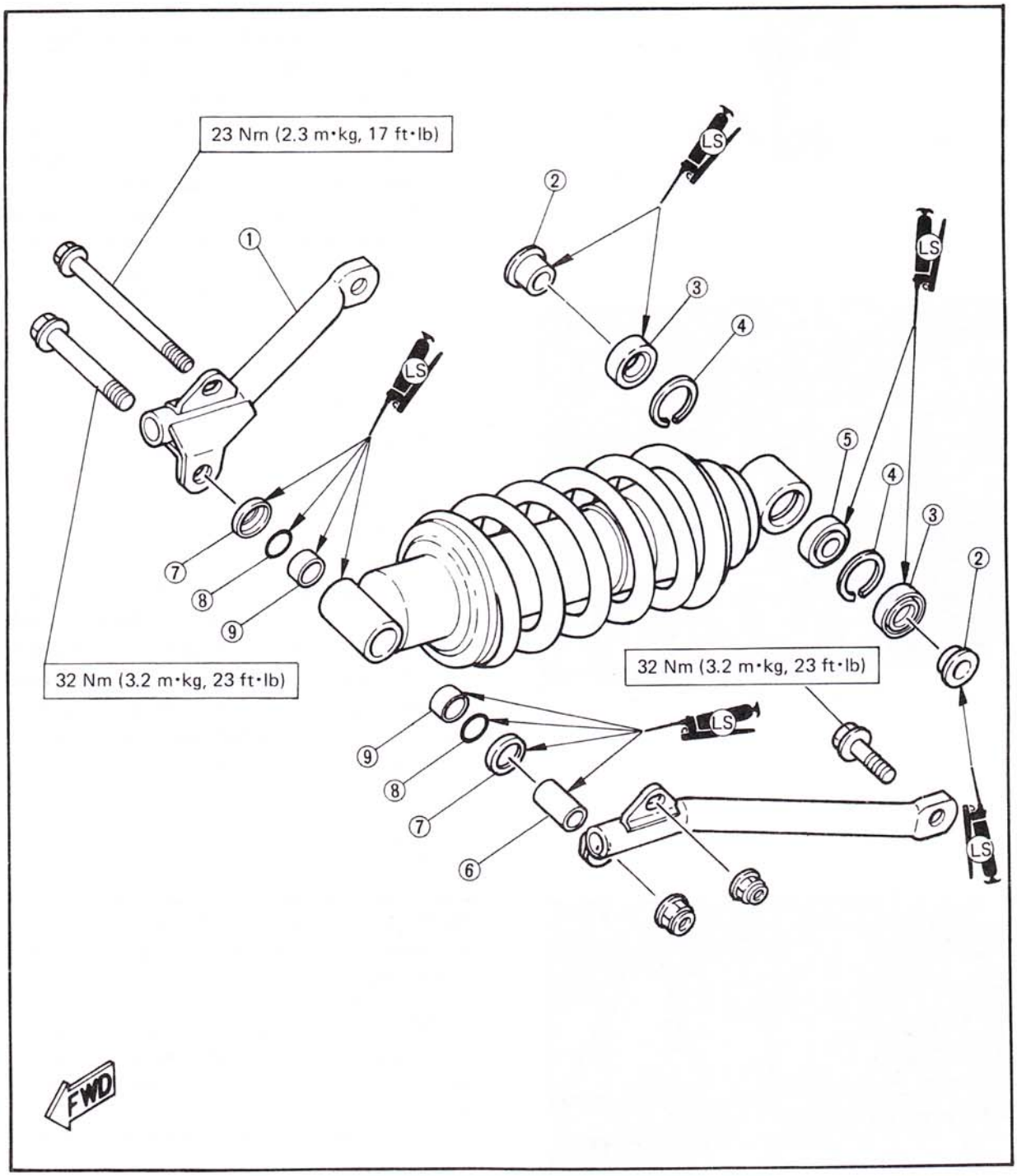


11. Tighten:
    - Cap bolt
      Use the Front Fork Cap Socket (90890-01104) # 17 mm ①.
    - Pinch bolts (Handlebar)
    - Pinch bolts (Steering crown)

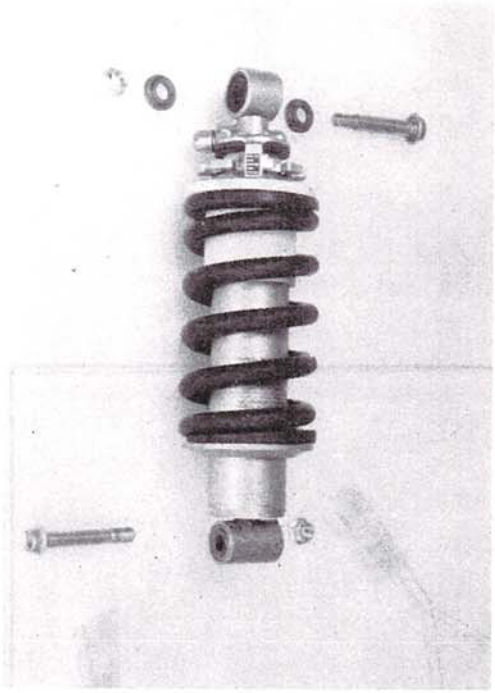
Cap Bolt:
23 Nm (2.3 m·kg, 17 ft·lb)
Pinch Bolt (Handlebar)
20 Nm (2.0 m·kg, 14 ft·lb)
Pinch Bolt (Steering Crown)
20 Nm (2.0 m·kg, 14 ft·lb)

REAR SHOCK ABSORBER ADJUSTMENT

1. Tension bar
2. Collar
3. Oil seal
4. Circlip
5. Bearing
6. Collar
7. Dust seal
8. O-ring
9. Bushing



REAR SHOCK ABSORBER ADJUSTMENT

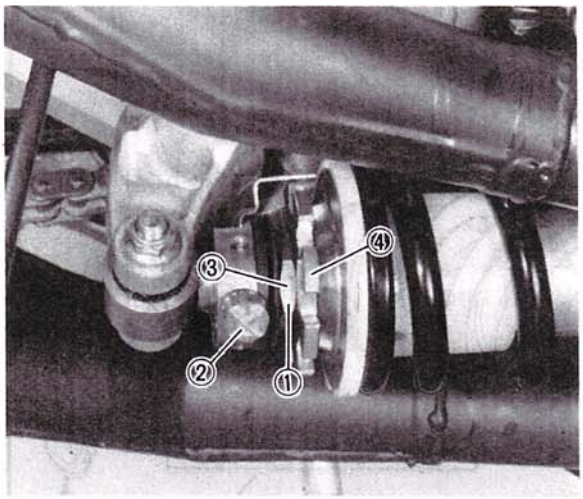


Rear Shock Absorber
(Monocross suspension "De Carbon" system)

WARNING:

This shock absorber contains highly pressurized nitrogen gas.
Read and understand the following information before handling the shock absorber. The manufacturer cannot be held responsible for property damage or personal injury that may result from improper handling.

1. **Do not tamper with or attempt to open the cylinder assembly.**
2. **Do not subject shock absorber to an open flame or other high heat source. This may cause the unit to explode due to excessive gas pressure.**
3. **Do not deform or damage the cylinder in any way. Cylinder damage will result in poor damping performance.**

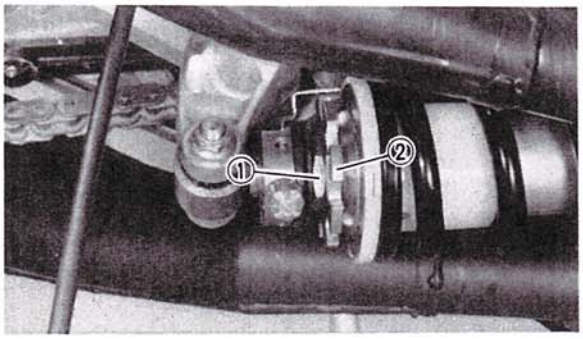


Rear Shock Absorber Adjustment

1. Adjust:
   - Spring preload ①
   - Damping ②

The rear shock absorber of this model features a spring preload adjuster which is a combined spring preload and damping adjuster. Normal adjustment can be made by turning this spring preload adjuster, whereas damping adjustment can only be made by the damping adjuster.

③ Locknut
④ Adjuster

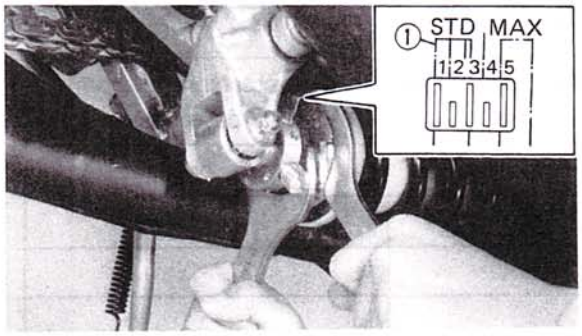


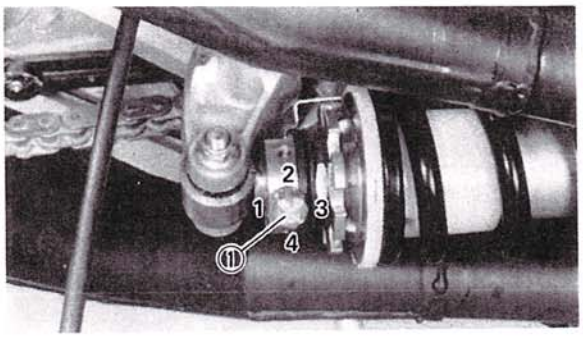
Spring preload adjustment steps:

- Loosen the adjuster locknut ① , and turn the adjuster ② .

NOTE:

When adjusting, use the special wrenches which are included in the owner's tool kit.





Hard → Turn the adjuster clockwise.
Soft → Turn the adjuster counterclockwise.

	HARD				STD
Adjusting position	5	4	3	2	1

- Tighten the adjuster locknut.

Adjuster Locknut:
42 Nm (4.2 m·kg, 30 ft·lb)

Damping adjustment steps:

Soft → Turn the adjuster ① clockwise.
Hard → Turn the adjuster counterclockwise.

	HARD		STD	SOFT
Adjusting position	4	3	2	1

CAUTION:

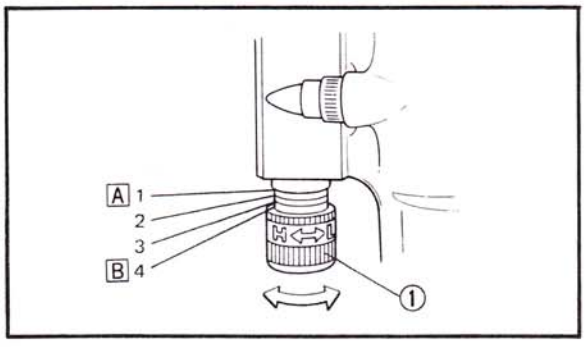
Turn the damping adjuster from 1 to 4 or 4 to 1 in progressive steps (1, 2, 3, 4). Never turn adjuster directly from 1 to 4 or 4 to 1.

ANTI-DIVE ADJUSTMENT

This anti-dive is adjustable in four stages depending on loading conditions.

WARNING:

Always adjust each anti-dive to the same setting. Uneven adjustment can cause poor handling and loss of stability.



Hard → Turn the adjuster ① counterclockwise.
Soft → Turn the adjuster clockwise.
Standard Position: "1"
Maximum Position: "4"

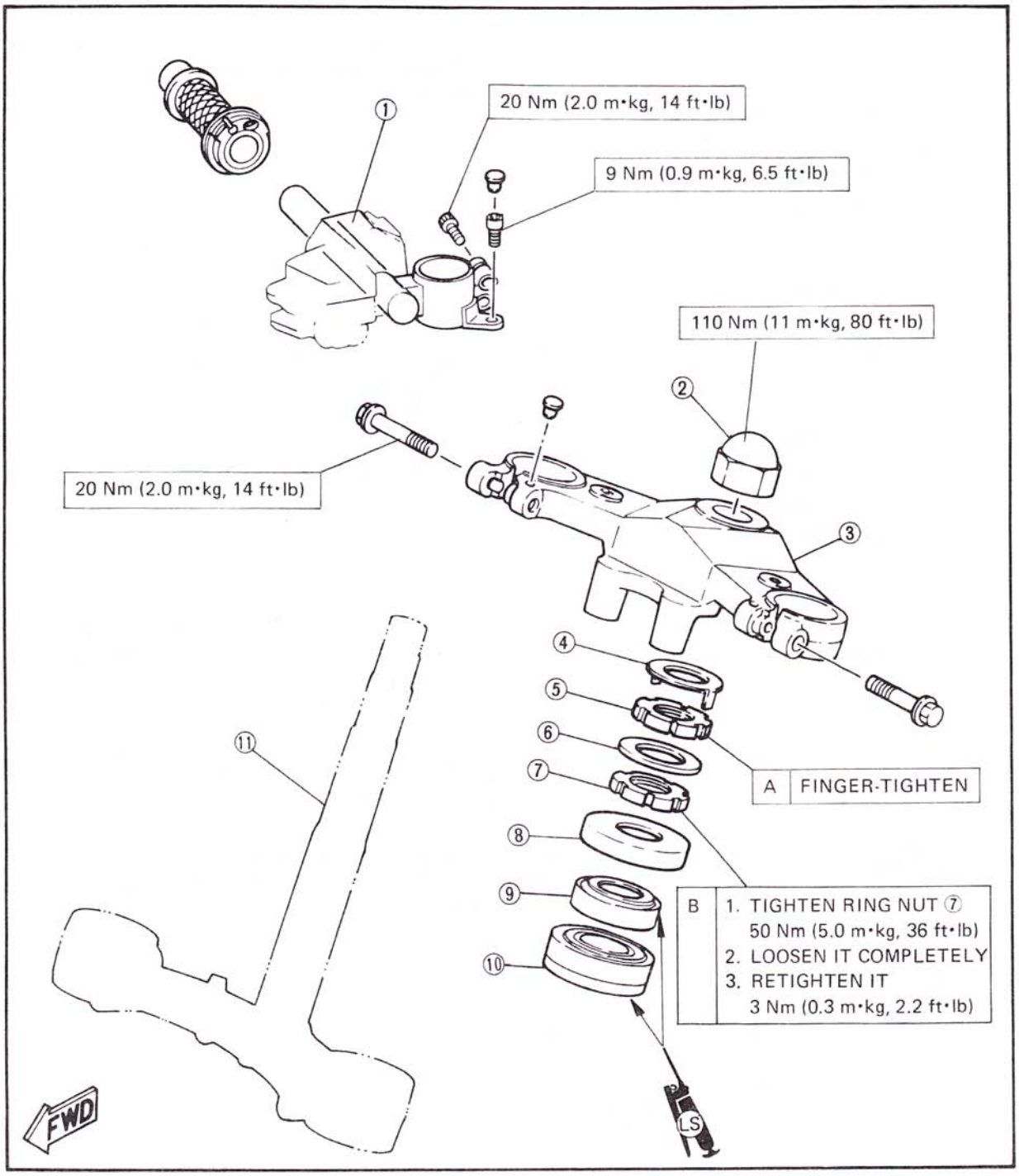
A Minimum
B Maximum

ANTI-DIVE ADJUSTMENT

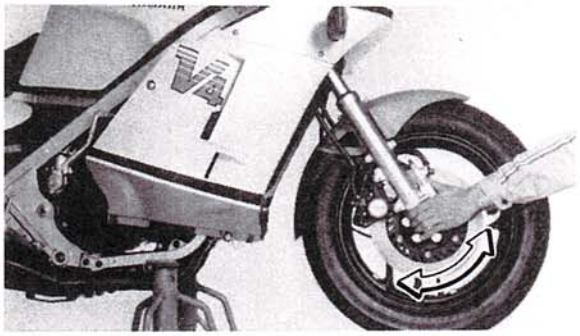
Adjusting bolt position	Loading condition		
	Solo rider	With accessory equipment or passenger	With accessory equipment and passenger
1	○		
2	○	○	
3		○	○
4			○

STEERING HEAD ADJUSTMENT

1. Handlebar
2. Nut
3. Steering crown
4. Lock washer
5. Ring nut (Upper)
6. Rubber washer
7. Ring nut (Lower)
8. Bearing cover
9. Bearing (Upper)
10. Bearing (Lower)
11. Steering stem

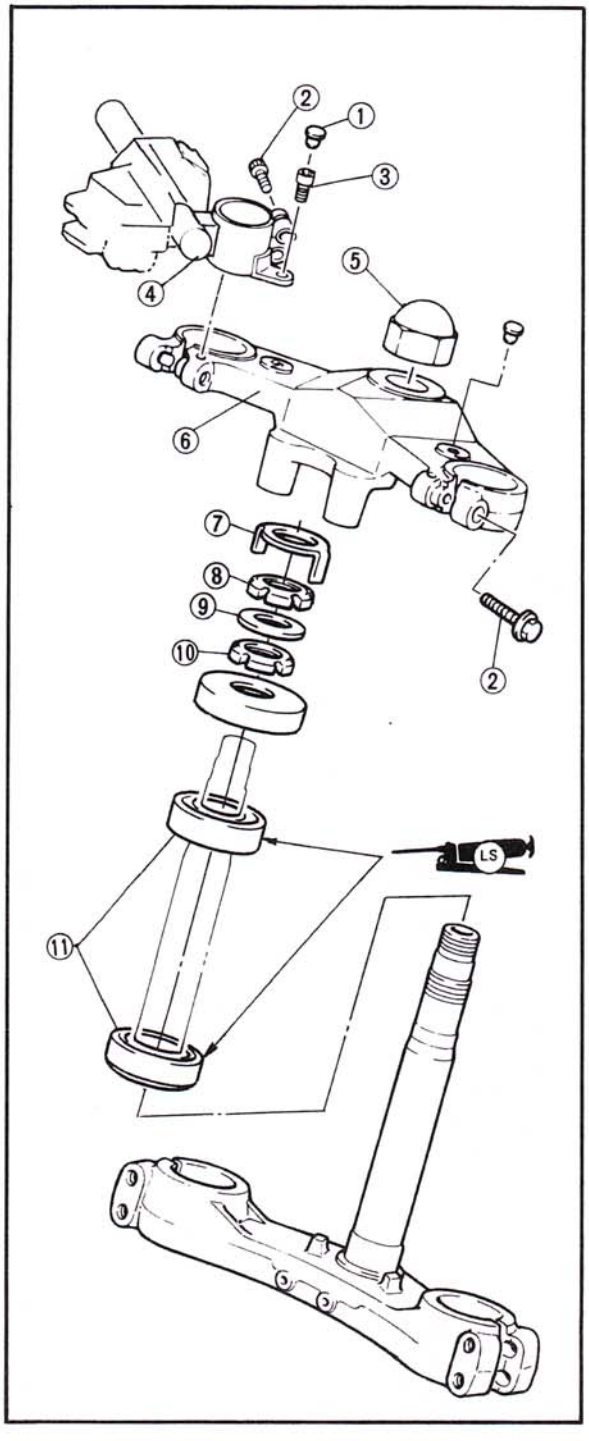


STEERING HEAD ADJUSTMENT



Steering Head Inspection

1. Remove:
   - Lower cowling
2. Check:
   - Steering assembly bearings
     Grasp the bottom of the forks and gently rock the fork assembly back and forth.
     Looseness → Adjust.



Adjustment

Steering Head Adjustment Steps:

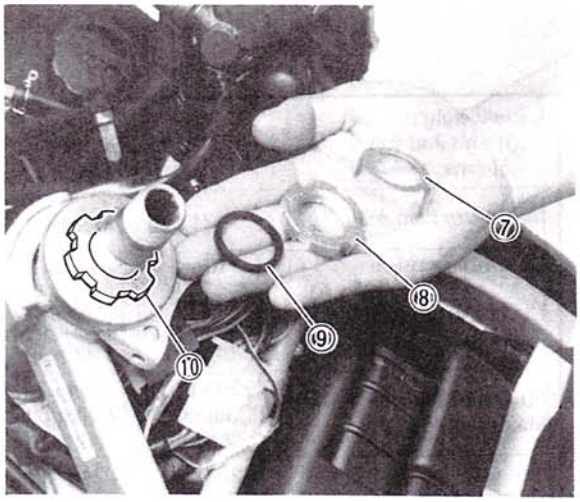
- Remove the fork and bolt caps ①.
- Loosen the pinch bolts ②.
- Remove the handlebar securing bolts ③.
- Remove the handlebars ④.
- Remove the steering stem nut ⑤.
- Remove the steering crown ⑥.
- Remove the lock washer ⑦.
- Loosen the ring nut ⑧ and washer ⑨.
- Tighten the ring nut ⑩.

Ring Nut (Lower):
50 Nm (5.0 m·kg, 36 ft·lb)

NOTE:
The taper side of ring nuts must face downward.

- Check the steering stem by turning it lock to lock. If there is any binding, remove the steering stem assembly and inspect the steering bearings ⑪.
  (See CHAPTER 6, STEERING HEAD for more details.)
- Loosen the ring nut ⑩ completely and retighten it to specification.

Ring Nut (Lower):
3 Nm (0.3 m·kg, 2.2 ft·lb)



- Install the washer ⑨.
- Install the ring nut ⑧ and hand-tighten, then align the slots of both ring nuts. If not aligned, hold the lower ring nut ⑩ and tighten the other until they are aligned.
- Install the lock washer ⑦.

NOTE:
Make sure the lock washer tab is placed in the slots.

- Install the steering crown ⑥ and tighten the steering stem nut ⑤ to specification.

Steering Stem Nut:
110 Nm (11.0 m·kg, 80 ft·lb)

- Install the handlebars ④ and torque the bolts ③ to specification.

Pinch Bolt:
20 Nm (2.0 m·kg, 14 ft·lb)
Handlebar Bolt:
9 Nm (0.9 m·kg, 6.5 ft·lb)

- Install the forks and bolt caps ①.

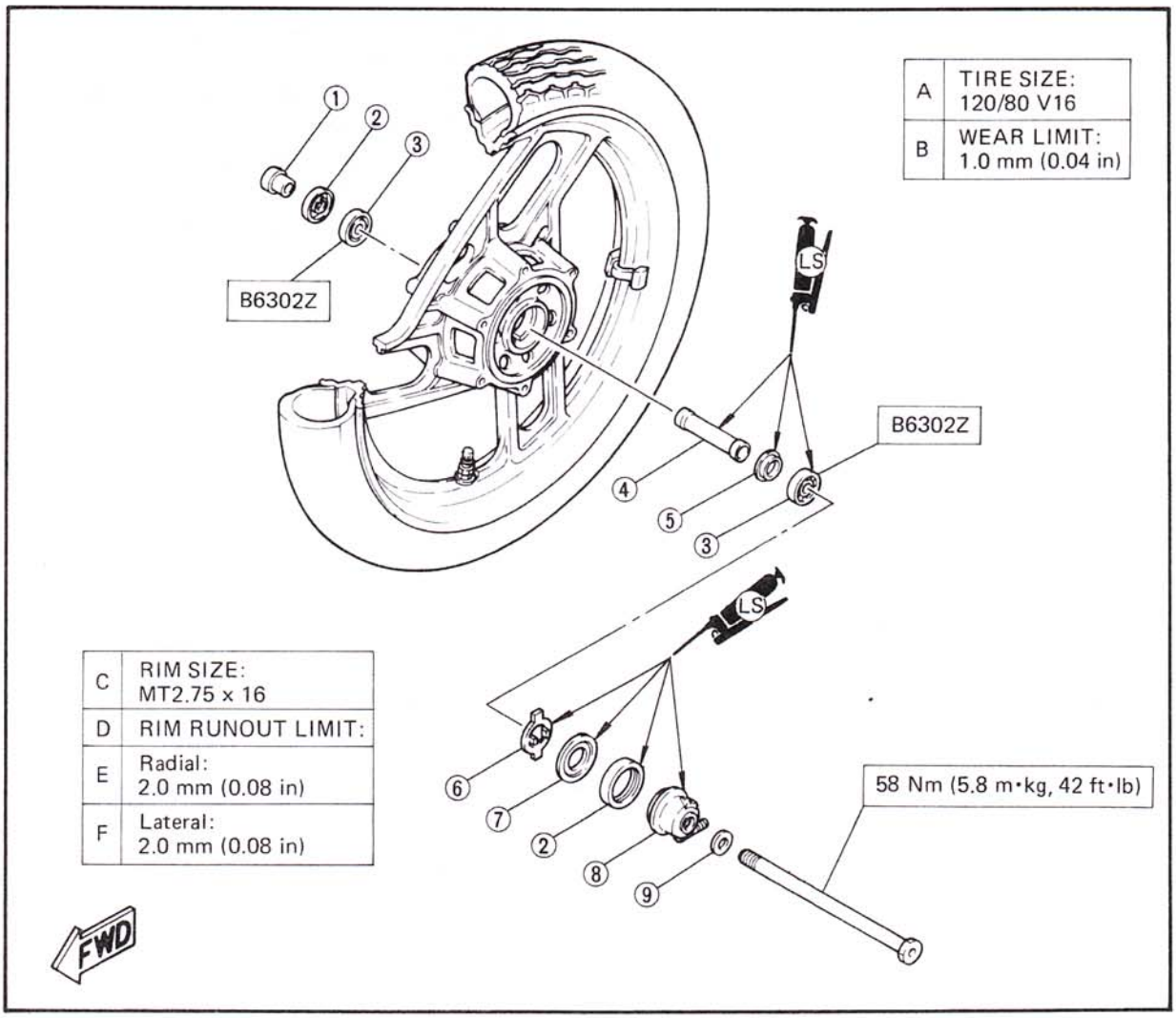
WHEEL BEARINGS

Front Wheel

1. Collar
2. Oil seal
3. Bearing
4. Spacer
5. Spacer flange
6. Meter clutch
7. Clutch retainer
8. Gear unit
9. Washer

Basic weight: With oil and full fuel tank	199 kg (439 lb)	
Maximum load *	211 kg (465 lb)	
Cold tire pressure	Front	Rear
Up to 90 kg (198 lb) load *	196 kPa (2.0 kg/cm², 28 psi)	226 kPa (2.3 kg/cm², 32 psi)
90 kg (198 lb) ~ Maximum load *	226 kPa (2.3 kg/cm², 32 psi)	284 kPa (2.9 kg/cm², 42 psi)
High speed riding	226 kPa (2.3 kg/cm², 32 psi)	245 kPa (2.5 kg/cm², 36 psi)

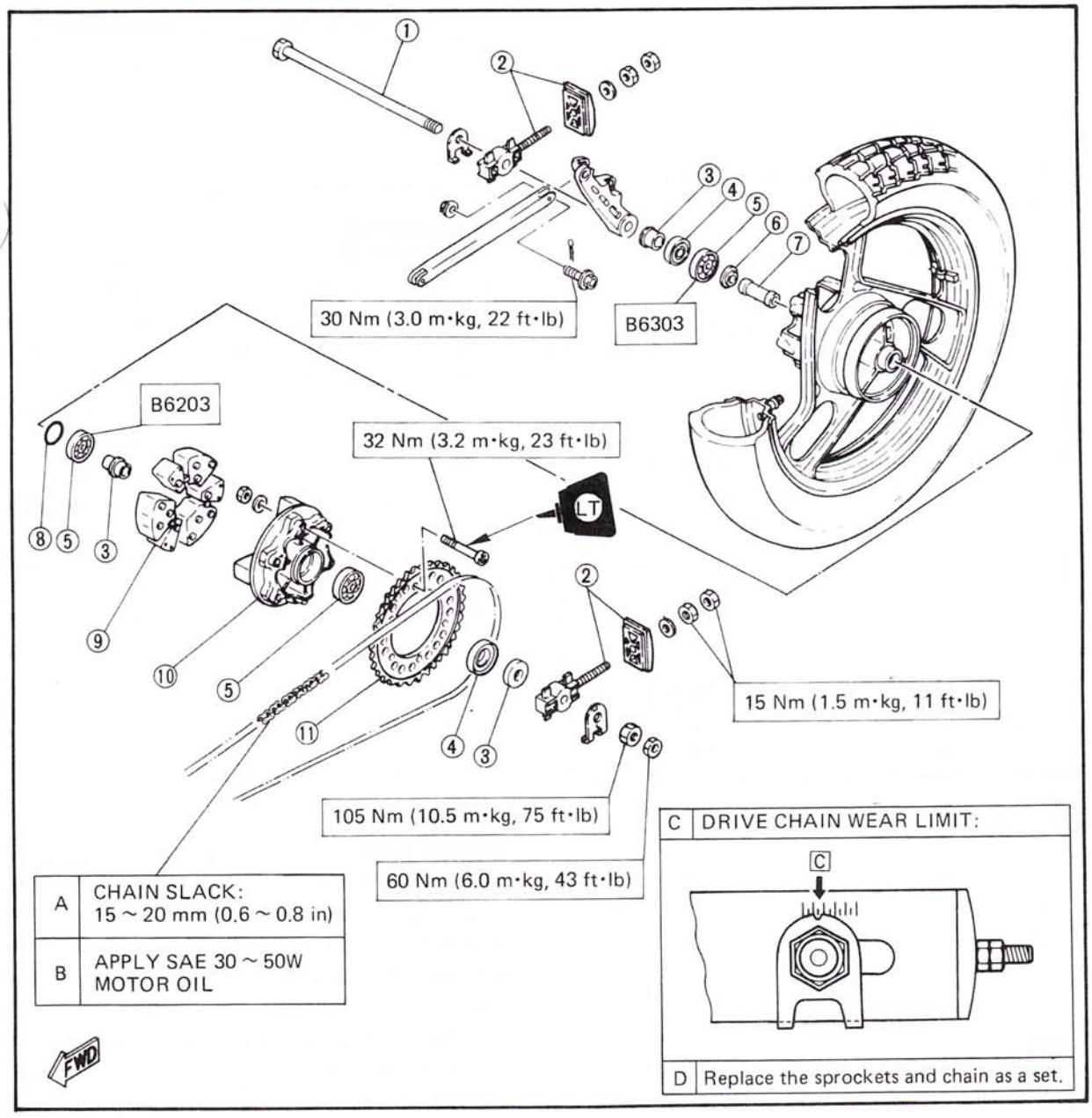
*Load is the total weight of cargo, rider, passenger, and accessories.



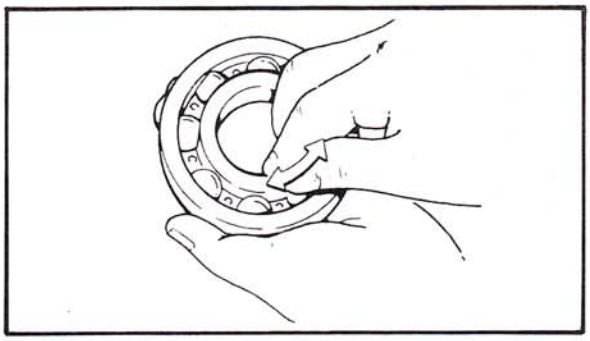
Rear Wheel

1. Rear axle
2. Drive chain puller
3. Collar
4. Oil seal
5. Bearing
6. Spacer flange
7. Spacer
8. O-ring
9. Damper
10. Clutch hub
11. Driven sprocket (40T)

TIRE SIZE: 130/80 V18
WEAR LIMIT: 1.0 mm (0.04 in)
RIM RUNOUT LIMIT:
Radial: 2.0 mm (0.08 in)
Lateral: 2.0 mm (0.08 in)



TUBELESS TIRES AND ALUMINUM WHEEL

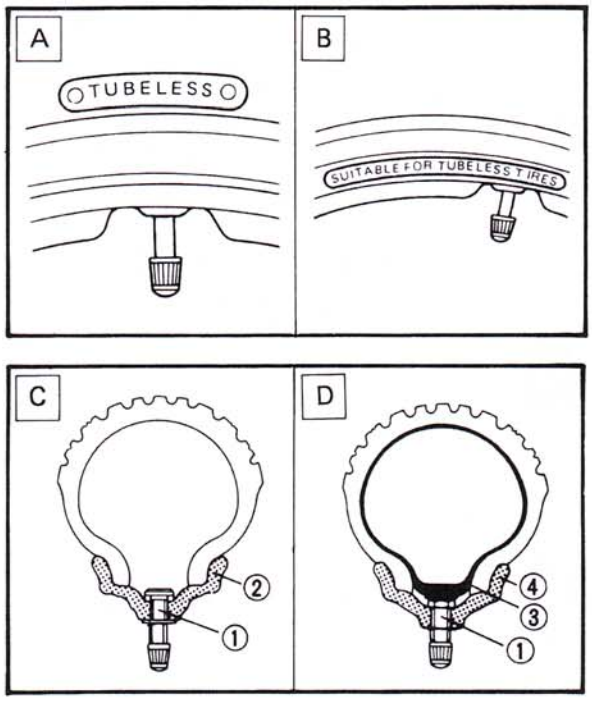


Front Wheel Bearings

1. Raise the front end of the motorcycle, and spin the wheel by hand. Touch the axle or front fork while spinning the wheel.
   Excessive vibration → Replace bearings.

Rear Wheel Bearings

1. Remove:
   - Rear wheel
2. Check:
   - Bearing movement
     Rotate with the fingers.
     Roughness/Wear → Replace.



TUBELESS TIRES AND ALUMINUM WHEELS

WARNING:

Do not attempt to use tubeless tires on a wheel designed for tube type tires only. Tire failure and personal injury may result from sudden deflation.

Wheel	Tire
Tube type	Tube type only
Tubeless	Tube type or tubeless

Be sure to install the correct tube when using tube type tires.

[A] Tire
[B] Wheel
[C] Tubeless tire
[D] Tube type tire
① Air valve
② Aluminum wheel (tubeless type)
③ Tube
④ Aluminum wheel (tube type)

WARNING:

This motorcycle is fitted with "V" range tires (for super high speed running). The following points must be observed in order for you to make fully effective use of these tires.

1. **Never fail to use "V" range tires in tire replacement. "S" or "H" tires may be in danger of bursting at super high-speeds.**

2. **New tires have a relatively poor adhesion on the road surface so do not allow them to be subjected to high speed load from maximum speed until after a break-in run of approx. 10 km (60 mi).**
3. **Before any high-speed runs, remember to allow a sufficient warm-up time for the tires.**
4. **Always use the correct tire inflation pressure according to the operating conditions.**

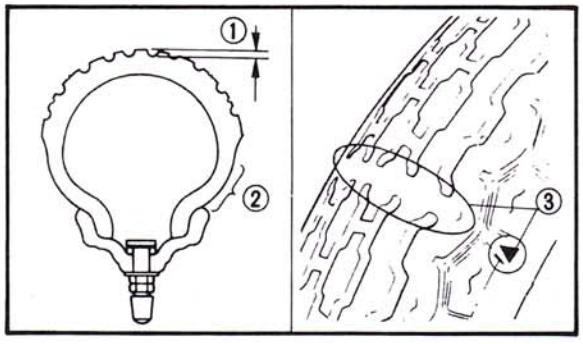
Always perform the following steps to ensure safe operation, maximum tire performance, and long service.

1. Measure:
   - Tire pressure
     Out of specification → Adjust.

Basic weight: With oil and full fuel tank	199 kg (439 lb)	
Maximum load *	211 kg (465 lb)	
Cold tire pressure	Front	Rear
Up to 90 kg (198 lb) load *	196 kPa (2.0 kg/cm², 28 psi)	226 kPa (2.3 kg/cm², 32 psi)
90 kg (198 lb) ~ Maximum load *	226 kPa (2.3 kg/cm², 32 psi)	284 kPa (2.9 kg/cm², 42 psi)
High speed riding	226 kPa (2.3 kg/cm², 32 psi)	245 kPa (2.5 kg/cm², 36 psi)

*Load is the total weight of cargo, rider, passenger, and accessories.

2. Inspect:
   - Tire surfaces
     Wear/Damage → Replace.



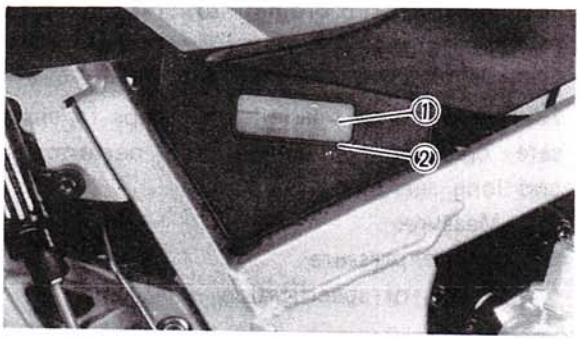
Minimum Tire Tread Depth:
(Front and Rear)
1.0 mm (0.04 in)

① Tread depth
② Side wall
③ Wear indicator

3. Inspect:
   - Aluminum wheels
     Damage/Bends → Replace.
     Never attempt even small repairs to the wheel.

NOTE:
Always balance the wheel when a tire or wheel has been changed or replaced.

WARNING:
Ride conservatively after installing a tire to allow it to seat itself properly on the rim.

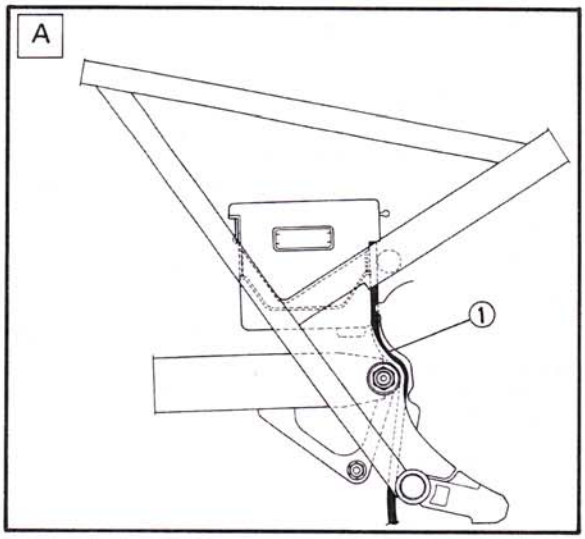


BATTERY
1. Check:
   - Fluid level
     Incorrect → Refill.
     Fluid level should be between upper and lower level marks.

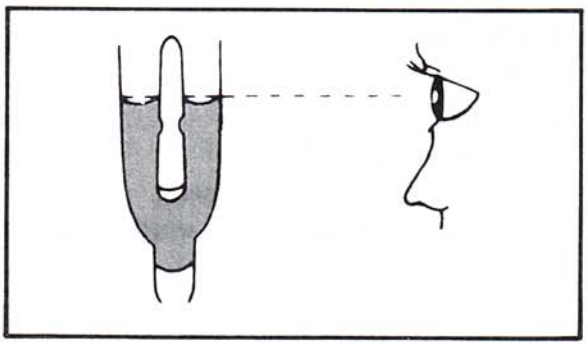
① Upper level
② Lower level

CAUTION:
Refill with distilled water only; tap water contains minerals harmful to a battery.

2. Connect:
   - Breather hose
     Be sure the hose is properly attached and routed.
3. Inspect:
   - Breather hose
     Obstruction → Remove.
     Damage → Replace.

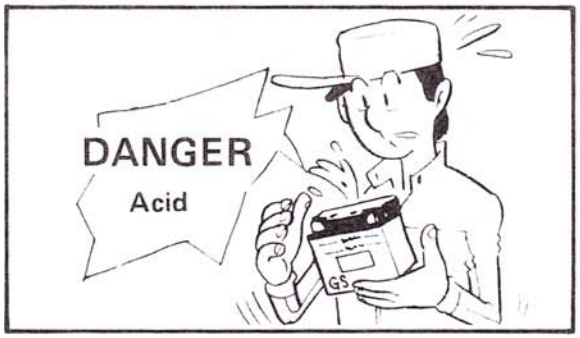


A HOW TO ROUTE BATTERY BREATHER HOSE
① Breather hose



CAUTION:
Always charge a new battery before using it to ensure maximum performance.

Charging Current:
0.55 amps/10 hrs
Specific Gravity:
1.280 at 20°C (68°F)



WARNING:

Battery electrolyte is dangerous; it contains sulfuric acid and therefore is poisonous and highly caustic.

Always follow these preventive measures:

- Avoid bodily contact with electrolyte as it can cause servere burns or permanent eye injury.
- Wear protective eye gear when handling or working near batteries.

Antidote (EXTERNAL):

- SKIN – Flush with water.
- EYES – Flush with water for 15 minutes and get immediate medical attention.

Antidote (INTERNAL):

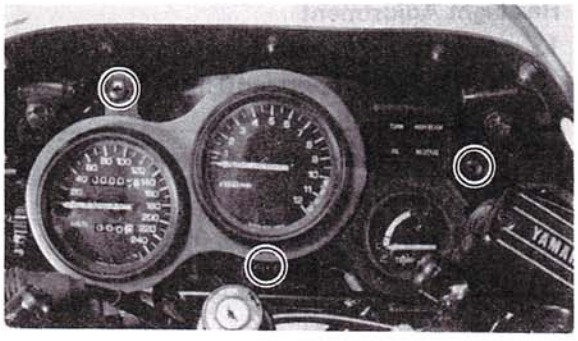
- Drink large quantities of water or milk follow with milk of magnesia beaten egg, or vegetable oil. Get immediate medical attention.

Batteries also generate explosive hydrogen gas, therefore you should always follow these preventive measures:

- Charge batteries in a well-ventilated area.
- Keep batteries away from fire, sparks, or open flames (e.g., welding equipment, lighted cigarettes, etc.)
- DO NOT SMOKE when charging or handling batteries.

KEEP BATTERIES AND ELECTROLYTE OUT OF REACH OF CHILDREN.

2

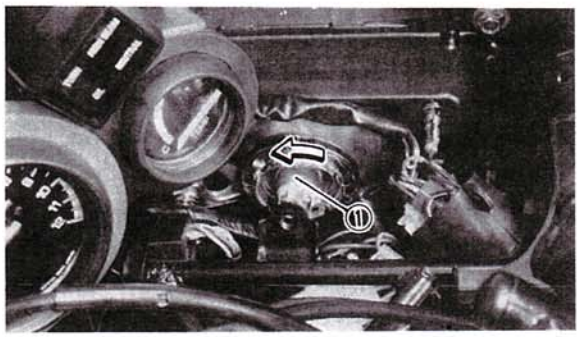


HEADLIGHT

Headlight Bulb Replacement

1. Remove:
   - Meter assembly

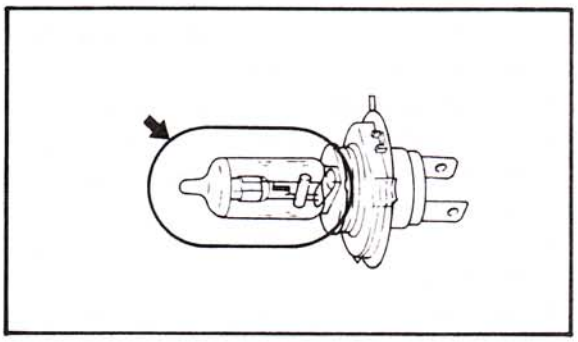
2. Disconnect:
   - Headlight connector ①
3. Remove:
   - Cover ②



4. Remove:
   - Bulb ①

WARNING:

Do not touch headlight bulb when it is on as the bulb generates enormous heat; keep flammable objects away.

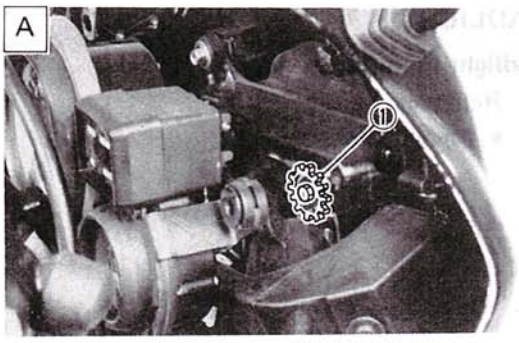


5. Install:
   - Bulb (New)

CAUTION:

Avoid touching glass part of bulb. Also keep it free from oil otherwise, transparency of glass, bulb life and illuminous flux will be adversely affected. If oil gets on bulb, clean it with a cloth moistened thoroughly with alcohol or lacquer thinner.

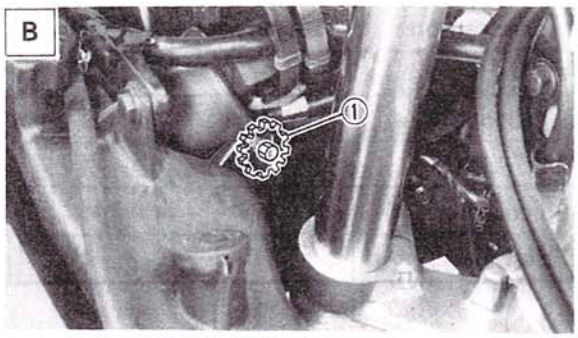
6. Install:
   - Cover
7. Connect:
   - Headlight connector
8. Adjust:
   - Headlight

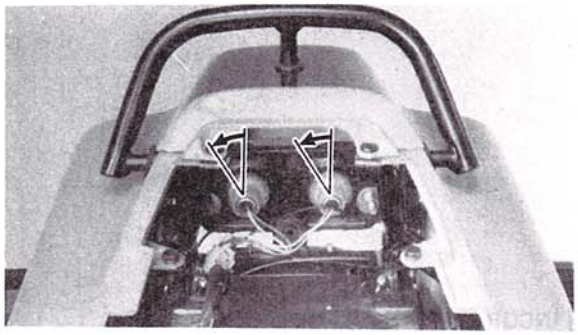


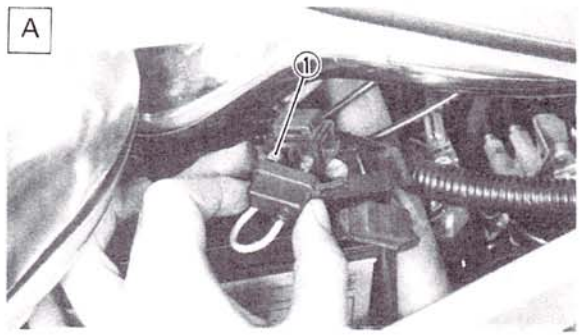
Headlight Adjustment

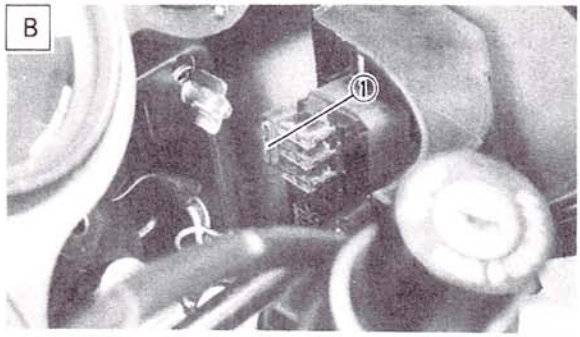
1. Adjust:
   - Headlight (Horizontally)

A Horizontal Adjustment	
Right	Turn adjusting knob ① clockwise
Left	Turn adjusting knob ① counterclockwie









2. Adjust:
   - Headlight (Vertically)

B Vertical adjustment	
Higher	Turn the adjusting knob ① counterclockwise
Lower	Turn the adjusting knob ① clockwise

3. Install:
   - Meter assembly

TAILLIGHT

Taillight Bulb(s) Replacement

1. Remove:
   - Seat
   - Tool kit
   - Tool box ①
2. Remove:
   - Bulbs

   Turn the bulb counterclockwise and remove.
3. Install:
   - Bulbs (New)
4. Connect:
   - Taillight connector
5. Install:
   - Tool box
   - Tool kit
   - Seat

FUSE

There are two fuse blocks on this motorcycle. The main fuse block is located at the right side of the battery A . The other fuse block is located behind the engine temperature gauge B .

1. Inspect
   - Fuses

   Defective → Replace.

   Blown fuse (new) → Inspect circuit.

NOTE:

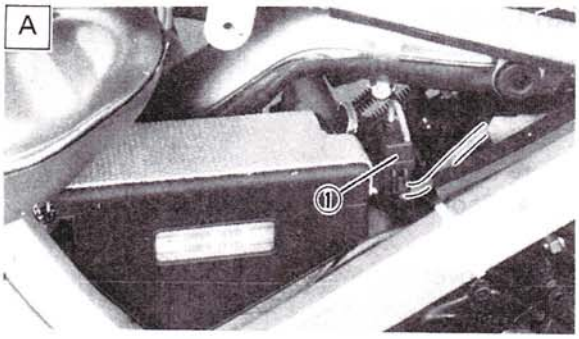
Install new fuses of proper amperage.

① Spare fuse

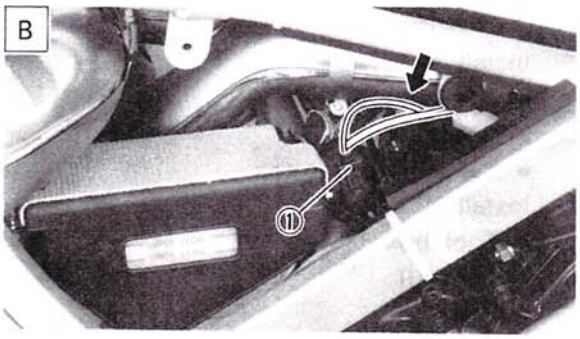
FUSE

Description	Amperage	Quantity
Main	20A	1
Headlight	15A	1
YPVS	10A	1
Signal	10A	1
Reserve	15A	1

A



B



2. Install:
   - Fuse holder ①

A CORRECT

B INCORRECT