





GENERAL INFORMATION

DESCRIPTION

① Taillight
② Silencer
③ Monocross suspension
④ Kick starter
⑤ Front fender
⑥ Brake pedal
⑦ Footrest
⑧ Front fork
⑨ Headlight
⑩ Fuel tank
⑪ Seat
⑫ Change pedal
⑬ Clutch lever
⑭ "ENGINE STOP" switch
⑮ Speedometer
⑯ Brake lever
⑰ Throttle grip

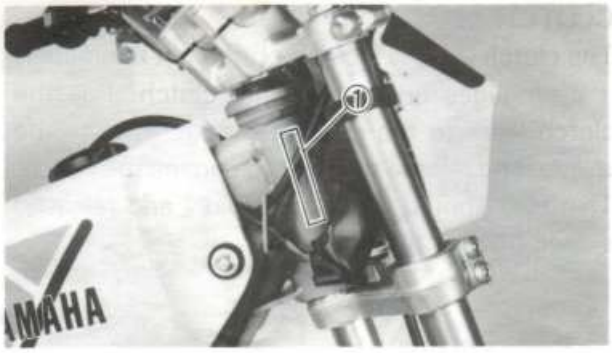
NOTE:

The machine you have purchased may differ slightly from those shown in the photographs.

MACHINE IDENTIFICATION

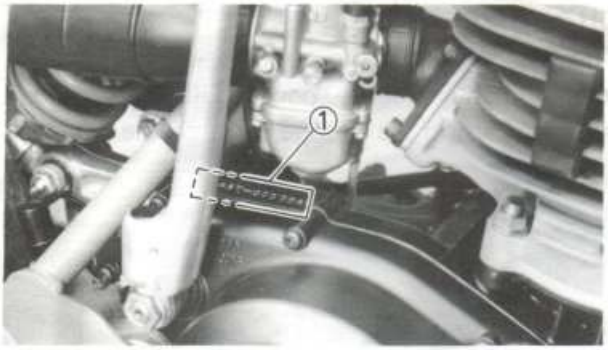
There are two significant reasons for knowing the serial number of your machine:

1. When ordering parts, you can give the number to your Yamaha dealer for positive identification of the model you own;
2. If your machine is stolen, the authorities will need the number to search for and identify your machine.



VEHICLE IDENTIFICATION NUMBER

The vehicle identification number (1) is stamped on the right of the steering head pipe.



ENGINE SERIAL NUMBER

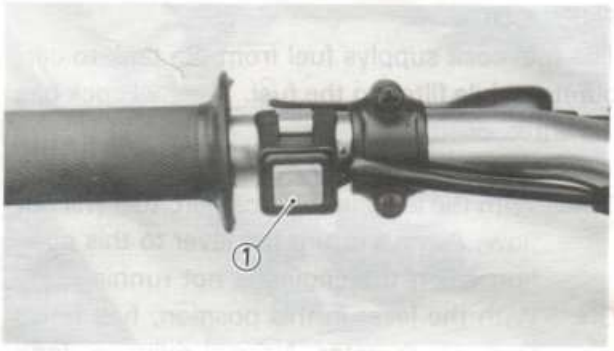
The engine serial number (1) is stamped into the elevated part of the right rear section of the engine.

CONTROL FUNCTIONS

SPEEDOMETER

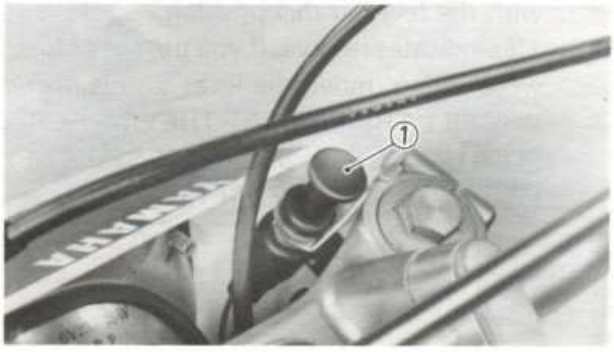
The trip odometer (1) is built into the speedometer.





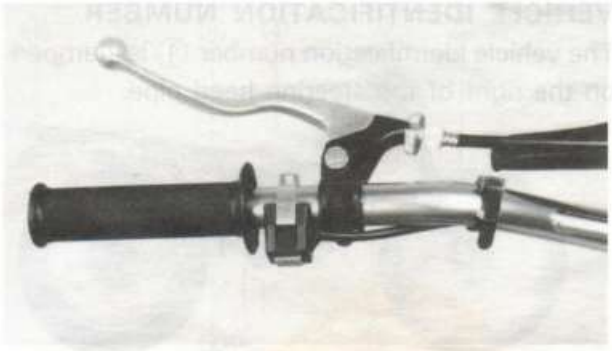
"ENGINE STOP" SWITCH

The "ENGINE STOP" switch (1) is a safety device for use in an emergency such as when the machine overturns or when trouble occurs in the throttle system. The engine will not run when the "ENGINE STOP" switch is pushed to "OFF". In case of emergency, push the switch to "OFF".



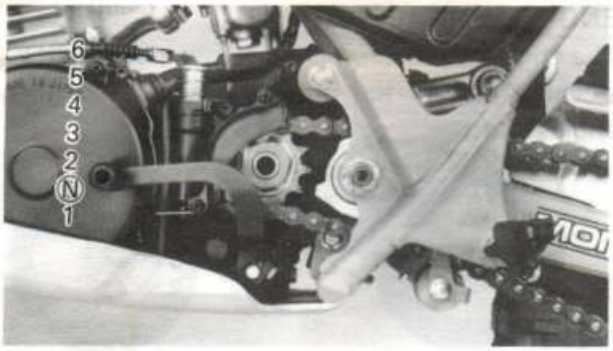
"LIGHTS" SWITCH

Pull the light switch (1) to "ON" to turn on the headlight, and taillight.



CLUTCH LEVER

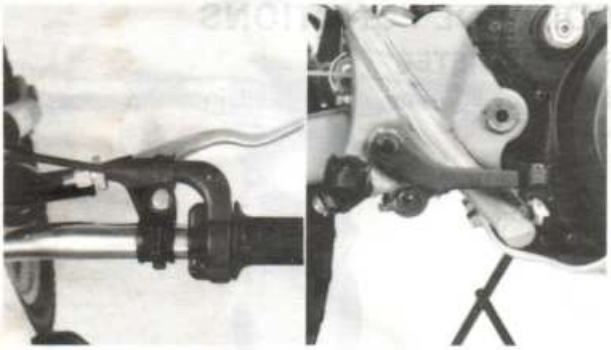
The clutch lever is located on the left handlebar; it disengages or engages the clutch. Pull the clutch lever to the handlebar to disengage the clutch, and release the lever to engage the clutch. The lever should be pulled rapidly and released slowly for smooth starts.



CHANGE PEDAL

The gear ratios of the constant-mesh 6-speed transmission are ideally spaced. The gears can be shifted by using the change pedal on the left side of the engine.

Ⓝ Neutral

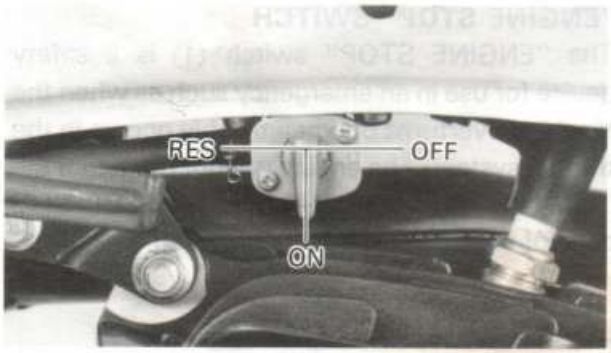


FRONT BRAKE LEVER

The front brake lever is located on the right handlebar. Pull it toward the handlebar to activate the front brake.

REAR BRAKE PEDAL

The rear brake pedal is on the right side of the machine. Press down on the brake pedal to activate the rear brake.



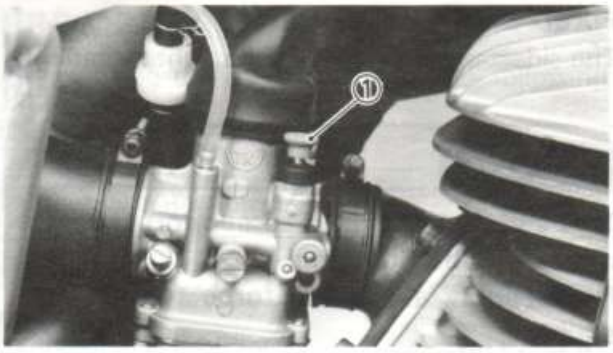
FUEL COCK

The fuel cock supplys fuel from the tank to carburetor while filtering the fuel. The fuel cock has the three positions:

OFF: With the lever in this position, fuel will not flow. Always return the lever to this position when the engine is not running.

ON: With the lever in this position, fuel flows to the carburetor. Normal riding is done with the lever in this position.

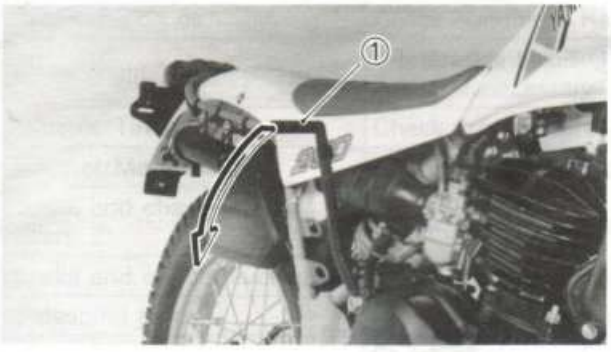
RES: This indicates reserve. If you run out of fuel while riding, move the lever to this position. FILL THE TANK AT THE FIRST OPPORTUNITY. BE SURE TO SET THE LEVER TO "ON" AFTER REFUELING.



STARTER KNOB (CHOKE)

When cold, the engine requires a richer air-fuel mixture for starting. A separate starter circuit, which is controlled by the starter, supplies this mixture. Pull the starter out to open the circuit for starting. When the engine has warmed up push it in to close the circuit.

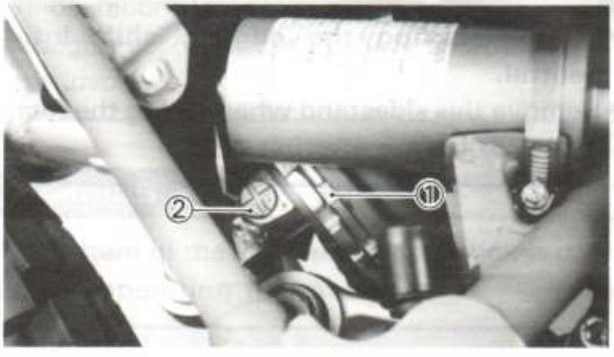
① Starter knob



KICK STARTER

Rotate the kick starter away from the engine. Push the starter down lightly with your foot until the gears engage, then kick smoothly and forcefully to start the engine. This model has a primary kick starter so the engine can be started in any gear if the clutch is disengaged. In normal practices, however, shift to neutral before starting.

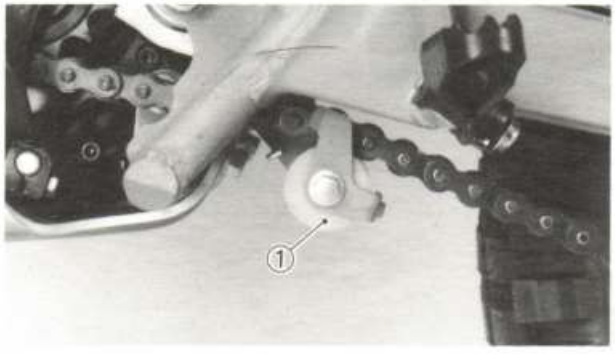
① Kick starter



REAR SHOCK ABSORBER

The spring preload and rebound damping can be adjusted to suit machine's load and the operating conditions. Refer to page 2-16 for proper adjustment procedures.

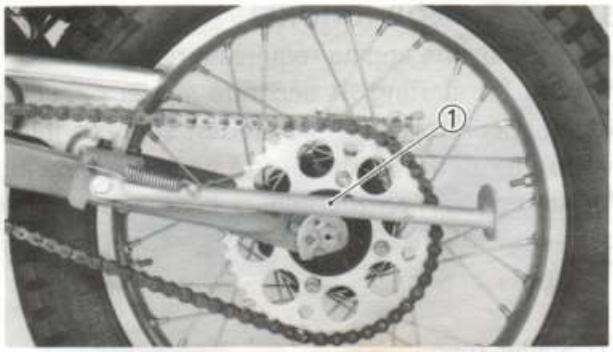
① Spring preload adjuster
② Rebound damping adjuster



DRIVE CHAIN TENSIONER

The tensioner is designed to remove small amounts of excessive chain slack, thereby reducing the "lurch" caused by rapid throttle changes.

① Drive chain tensioner



FIXED SIDESTAND

The sidestand is located on the right swingarm.

WARNING:

This sidestand is used to support only the machine when parking it.
Never apply additional force to the sidestand.

① Fixed sidestand



DETACHABLE SIDESTAND

This sidestand ① is inserted into the drive sprocket shaft hole.

NOTE:

This sidestand is used to support only the machine when servicing or transporting it.

WARNING:

- **Before starting the engine, shift into neutral.**
- **Remove this sidestand when racing the rear wheel or before starting out.**

PRE-OPERATION CHECKS

Before using this machine, check the following points:

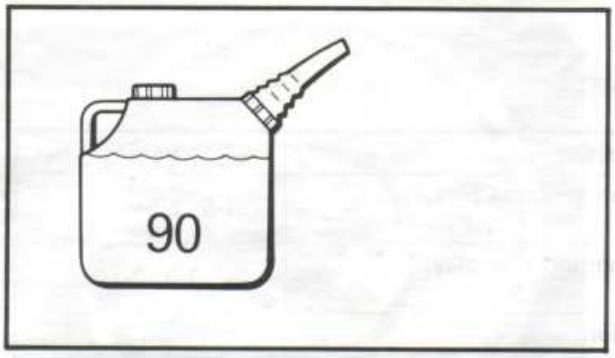
Item	Routine	Page
Front brake/Rear brake	Check operation, condition and free play. Adjust if necessary.	1-3, 2-14 ~ 2-16
Clutch	Check operation, condition and free play. Adjust if necessary.	1-3, 2-14
Throttle grip/Housing	Check for smooth operation. Lubricate/Adjust if necessary.	2-12
Transmission oil	Check condition. Replace if necessary.	2-9
Drive chain	Check chain tension and condition. Adjust if necessary.	1-4, 2-19 ~ 2-21
Wheels/Tires	Check tire pressure, wear, damage, spoke tightness.	2-17 ~ 2-19
Control/Meter cables	Check for smooth operation. Lubricate if necessary.	—
Brake and change pedal shaft	Check for smooth operation. Lubricate if necessary.	1-3, 2-15
Brake and clutch lever pivots	Check for smooth operation. Lubricate if necessary.	1-3
Sidestand pivot	Check for smooth operation. Lubricate if necessary.	1-5
Fittings/Fasteners	Check all chassis fittings and fasteners. Tighten/Adjust, if necessary.	—
Fuel tank	Check fuel level/top-up as required	1-7
Light	Check for proper operation.	—
Battery	Check fluid level, top-up with distilled water if necessary.	—

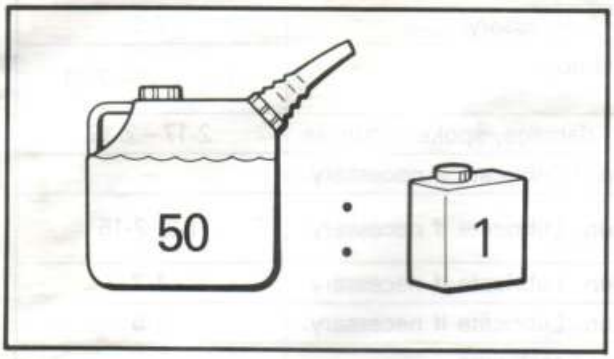
NOTE:

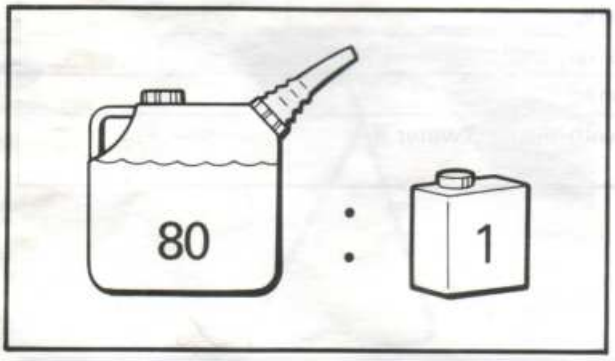
Pre-operation checks should be made each time the machine is used. Such an inspection can be throughly accomplished in a very short time; and the added safety it assures is more than worth the time involved.

WARNING:

If any item in the Pre-Operation Check is not working properly, have it inspected and repaired before operating the machine.







FUEL AND OIL

FUEL

Use premium fuel with an octane rating of at least 90. Mix oil with the gas at the ratio specified below. Always use fresh, name-brand gasoline, and mix the oil and gas the day of the race. Do not use premix that is more than a few hours old.

Fuel Tank Capacity:
3.5 L (0.77 Imp gal, 0.93 US gal)

MIXING OIL

Mixing Oil
Recommended Oil:
Yamalube "R"
(Yamalube Racing 2-cycle Oil)
Mixing Ratio: 50 : 1

If for any reason you should use another type, select from the following list.

Mixing Ratio: 80 : 1
Castrol R30
Castrol A545
Castrol A747

CAUTION:

Never mix two types of oil in the same batch: clotting of the oil could result. If you wish to change oil types, be sure to drain the fuel tank and the carburetor float bowl of old premix prior to filling with the new type.

OPERATION AND IMPORTANT RIDING POINT

WARNING:

Before riding this machine, become thoroughly familiar with all operating controls and their function. Consult a Yamaha dealer regarding any control or function that you do not thoroughly understand.

STARTING A COLD ENGINE

1. Shift transmission into neutral.
2. Turn the fuel cock to "ON".
3. Operate the carburetor starter knob (CHOKE) and completely close the throttle grip.
4. Kick the kick crank with full strength to start the engine.
5. After the engine starts, warm up for one or two minutes. Make sure the starter knob (CHOKE) is returned to the original position before riding.

WARMING UP

To get maximum engine life, always "warmup" the engine before riding the machine.
Never accelerate hard with a cold engine!
To see weather or not the engine is warm, see if it responds to throttle normally with the starter knob (CHOKE) turned off.

STARTING A WARM ENGINE

To start warm engine, the starter knob is not required.

SHIFTING

The transmission lets you control the amount of power you have available at a given speed for starting, accelerating, climbing hills, etc. The use of the change pedal is shown in the illustration. (Page 1-3)
To shift into NEUTRAL, repeatedly depress the change pedal until it reaches the end of its travel (you will feel a stop when you are in first gear) then raise the pedal slightly.

CAUTION:

Always use the clutch when changing gears. The engine, transmission, and driveline are not designed to withstand the shock of forced shifting and can be damaged by shifting without the clutch.

ENGINE BREAK-IN

You must not put an excessive load on the engine during the first ten to twenty hours of operation. If odometer is maintained, use the following break-in procedure:

CAUTION:

During the break-in period, a break-in oil/fuel mixture is required.

Mixing Oil:	Mixing Ratio:
Yamalube "R"	24 : 1
Castrol R30 A545 A747	30 : 1

1. 0 ~ 100 km (0 ~ 60 mi):
   Avoid operation above one half throttle.

2. 100 ~ 200 km (60 ~ 120 mi):
   Avoid full throttle operation. Allow the machine to rev freely through the gears but do not use full throttle at any time.

3. 200 ~ 400 km (120 ~ 250 mi):
   Avoid prolonged full throttle operation.
   Avoid cruising speeds in excess of one half throttle. Vary speeds occasionally.

4. 400 km (250 mi) and beyond:
   Avoid full throttle operation.
   Avoid cruising speed in excess to 100 km/h (65 mi/h).

PARKING

When parking the machine, stop the engine. Turn the fuel cock to "OFF" whenever stopping the engine.

WARNING:

The muffler and exhaust pipe are hot. Park the machine in a place where pedestrians or children are not likely to touch the machine. Do not park the machine on a slope or soft ground; the machine may overturn.

CLEANING AND STORAGE

A. CLEANING

Frequent thorough cleaning of your machine will not only enhance its appearance but will improve its general performance and extend the useful life of many components.

1. Before cleaning the machine:
   a. Block off the end of exhaust pipe to prevent water entry; a plastic bag and strong rubber band may be used.
   b. Make sure the spark plug and fuel tank cap are properly installed.
2. If the engine case is excessively greasy, apply degreaser with a paint brush. Do not apply degreaser to the chain, sprockets, or wheel axles.
3. Rinse the dirt and degreaser off with a garden hose, use only enough pressure to do the job.

CAUTION:

Excessive hose pressure may cause water seepage and contamination of wheel bearings, front forks, brakes and transmission seals. Many expensive repair bills have resulted from improper high pressure detergent applications such as those available in coin-operated car washers.

4. Once the majority of the dirt has been hosed off, wash all surfaces with warm water and mild, detergent-type soap. An old tooth brush or bottle brush is handy for hard-to-get-to places.
5. Rinse the machine off immediately with clean water and dry all surfaces with a chamois, clean towel, or soft absorbent cloth.
6. Dry the chain and lubricate it to prevent rust.
7. Chrome-plated parts such as forks, etc., may be further cleaned with automotive chrome cleaner.
8. Clean the seat with a vinyl upholstery cleaner to keep the cover pliable and glossy.
9. Automotive-type wax may be applied to all painted and chrome-plated surfaces. Avoid combination cleaner-waxes. Many contain abrasives which may mar the paint or protective finish on the fuel tank and side covers. When finished, start the engine and let it idle for serveral minutes.

B. STORAGE

Long term storage (60 days or more) of your machine will require some preventive procedures to guard against deterioration. After thoroughly cleaning the machine, prepare it for storage as follows:

1. Drain the fuel tank, fuel lines, and carburetor float bowl(s).
2. Remove the spark plug(s), pour about one tablespoon of SAE 10W30 or 20W40 motor oil in spark plug hole(s) and reinstall spark plugs. Kick the engine over several times (with ignition off) to coat the cylinder walls with oil.
3. Remove the drive chain. Thoroughly clean the chain with kerosene and lubricate. Reinstall the chain or store it in a plastic bag (tied to frame for safe-keeping).
4. Lubricate all control cables.
5. Block up the frame to raise both wheels off the ground.
6. Tie a plastic bag over the exhaust pipe outlet to prevent moisture entering.
7. If storing in a humid or salt-air atmosphere, coat all exposed metal surfaces with a light film of oil. Do not apply oil to any rubber parts or the seat cover.

NOTE:

Make any necessary repairs before storing the machine.

PERIODIC INSPECTIONS AND ADJUSTMENTS

PERIODIC MAINTENANCE INTERVALS AND LUBRICATION INTERVALS

INTRODUCTION

Periodic inspection, adjustment, and lubrication will keep your machine in the safest and most efficient condition possible. Safety is an obligation of the machine owner. The maintenance and lubrication schedule chart should be considered strictly as a guide to general maintenance and lubrication intervals. You must take into consideration that weather, terrain, geographical locations, and a variety of individual uses all tend to demand that each owner alter this time schedule to shorter intervals to match his environment. The most important points of machine inspection, adjustment, and lubrication are explained in the following pages.

NOTE:

If you do not have a torque wrench available during a service operation requiring one, take your machine to a Yamaha dealer to check the torque settings and adjust them as necessary.

WARNING:

If you are not familiar with machine service, this work should be done by a Yamaha dealer.

WARNING:

Modifications to this machine not approved by Yamaha may cause loss of performance, and render it unsafe for use. Consult a Yamaha dealer before atempting any changes.

PERIODIC MAINTENANCE INTERVALS AND LUBRICATION INTERVALS CHART

Item	After break-in	Every race	Every 500 kg (300 miles)	Every 1,500 km (1,000 miles)	As required	Remarks
PISTON Inspect and clean Replace		●			●	Inspect crack Remove carbon
PISTON RINGS Inspect Replace	●	●	●		●	Check ring end gap
PISTON PIN, SMALL END BEARING Inspect Replace				●	●	
CYLINDER HEAD Inspect and clean Retighten	● ●	● ●				Remove carbon
CYLINDER Inspect and clean Replace	●	●			●	Seizure Wear
AIR FILTER Clean and oil Replace	●	●			●	Use foam-air-filter oil
CLUTCH Inspect and adjust Replace	●	●			●	Inspect friction plate, clutch plate and spring
TRANSMISSION Replace oil Inspect transmission	●			●	●	SAE 10W30 type SE motor oil
SHIFT CAM, FORK Inspect					●	Inspect wear

PERIODIC MAINTENANCE INTERVALS AND LUBRICATION INTERVALS

INSP ADJ

Item	After break-in	Every race	Every 500 kg (300 miles)	Every 1,500 km (1,000 miles)	As required	Remarks
ROTOR NUT Retighten				●		
MUFFLER Inspect Clean	●	●		●		
CARBURETOR Inspect, adjust and clean	●	●				
SPARK PLUG Inspect and clean Replace	●	●			●	
DRIVE CHAIN Lubricate, slack, alignment Replace	●	●			●	Use SAE30 ~ 50 motor oil Slack: 20 ~ 30 mm (0.8 ~ 1.2 in)
OUTSIDE NUTS AND BOLTS Retighten	●	●				
FRAME Clean and inspect	●	●				
FUEL TANK, COCK Clean and inspect	●		●			
BRAKES Adjust free play Lubricate pivot point Replace linings	● ●	● ●			●	Lining wear limit: 2 mm (0.08 in)
FRONT FORKS Inspect and adjust Replace oil Replace oil seal	●	●			● ●	Yamaha Fork & Shock oil 10Wt
REAR SHOCK Inspect and adjust Lube and retighten	● ●	● ●				Lithium base grease
CHAIN TENSIONER Inspect and replace	●	●				Wear and alignment
SWINGARM Inspect, lube and retighten	●	●				Lithium base grease
RELAY ARM Inspect and lube	●	●				Lithium base grease
STEERING HEAD Inspect free play and retighten Clean and lube Replace bearing	●	●		●	●	Medium weight wheel bearing grease
TIRE, WHEELS Inspect air pressure, wheel run-out tire wear and spoke looseness Retighten sprocket bolt Inspect bearings Replace bearings Lubricate	● ●	● ●	● ●		●	Medium weight wheel bearing grease
THROTTLE, CONTROL CABLE Check routing and connection Lubricate	● ●	● ●				SAE 10W30 motor oil

2

PERIODIC MAINTENANCE INTERVALS AND LUBRICATION INTERVALS

Item	After break-in	Every race	Every 500 kg (300 miles)	Every 1,500 km (1,000 miles)	As required	Remarks
CHANGE Lubricate pivot point	●	●				SAE 10W30 motor oil
IGNITION TIMING Inspect and adjust	●				●	

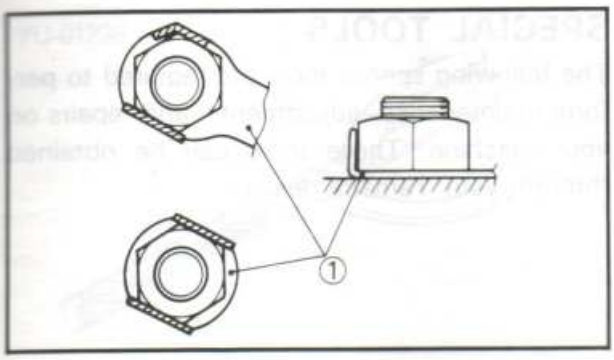
IMPORTANT INFORMATION

ALL REPLACEMENT PARTS

1. We recommend to use Yamaha genuine parts for all replacements. Use oil and/or grease recommended by Yamaha for assembly and adjustment.

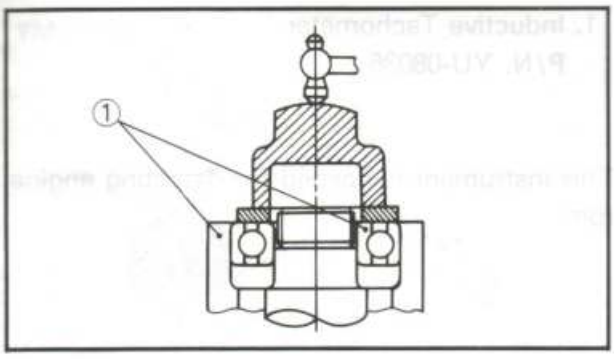
GASKETS, OIL SEALS, AND O-RINGS

1. All gaskets, seals, and O-rings should be replaced when an engine is overhauled. All gasket surfaces, oil seal lips, and O-rings must be cleaned.
2. Properly oil all mating parts and bearings during reassembly. Apply grease to the oil seal lips.



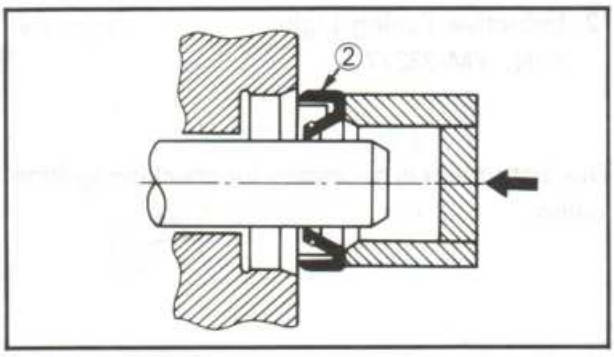
LOCK WASHERS/PLATES AND COTTER PINS

1. All lock washers/plates ① and cotter pins must be replaced when they are removed. Lock tab(s) should be bent along the bolt or nut flat(s) after the bolt or nut has been properly tightened.



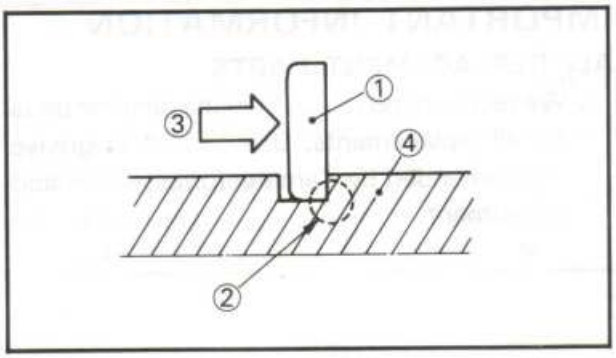
BEARINGS AND OIL SEALS

1. Install the bearing(s) ① and oil seal(s) ② with their manufacturer's marks or numbers facing outward. (In other words, the stamped letters must be on the side exposed to view.) When installing oil seal(s), apply a light coating of light-weight lithium base grease to the seal lip(s). Oil the bearings liberally when installing.



CAUTION:

Do not use compressed air to spin the bearings dry. This causes damage to the bearing surfaces.



CIRCLIPS

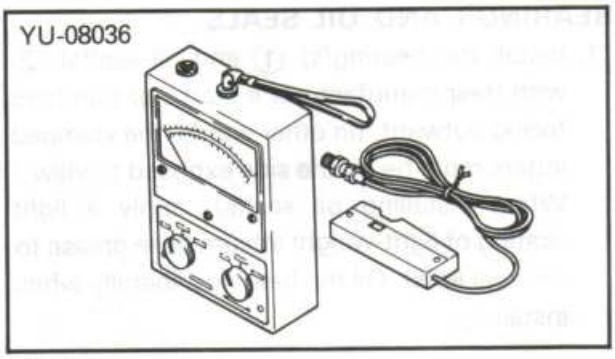
1. All circlips should be inspected carefully before reassembly. Always replace piston pin clips after one use. Replace distorted circlips. When installing a circlip ①, make sure that the sharp-edged corner ② is positioned opposite to the thrust ③ it receives. See the sectional view.

④ Shaft

SPECIAL TOOLS

The following special tools are required to perform maintenance, adjustments, and repairs on your machine. These tools can be obtained through your Yamaha dealer.

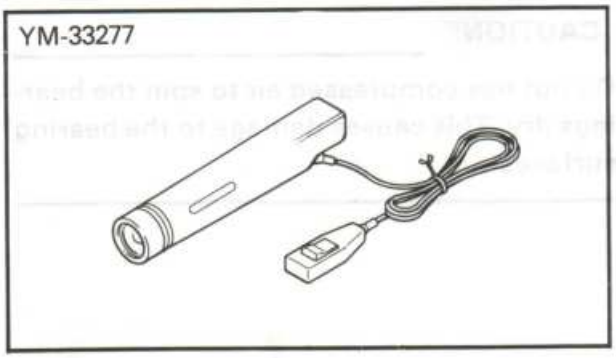
YU-08036



1. Inductive Tachometer
   P/N. YU-08036

This instrument is needed for detecting engine rpm.

YM-33277



2. Inductive Timing Light
   P/N. YM-33277

This instrument is necessary for checking ignition timing.

YU-01037
YU-03097



3. Dial Gauge Set
P/N. YU-01037, YU-03097

This instrument is necessary for ignition timing adjustment.

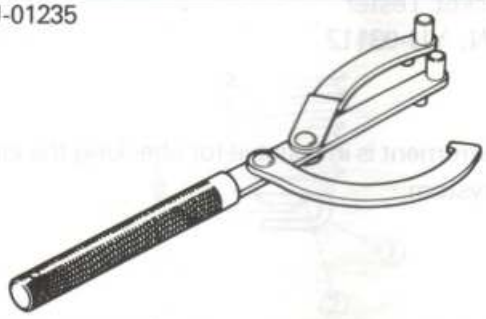
YM-91042



4. Clutch Holding Tool
P/N. YM-91042

This tool is used to hold the clutch when removing or installing the clutch boss locknut.

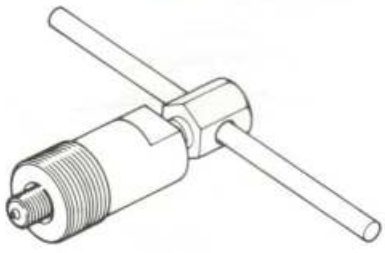
YU-01235



5. Rotor Holding Tool
P/N. YU-01235

This tool is used to hold the magneto when removing or installing the magneto locknut.

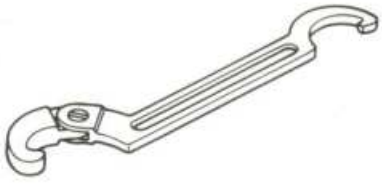
YM-01089



6. Rotor Puller
P/N. YM-01089

This tool is used to remove the magneto.

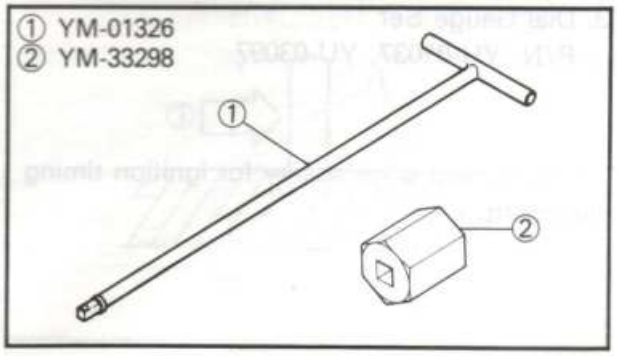
YU-01268



7. Steering Nut Wrench
P/N. YU-01268

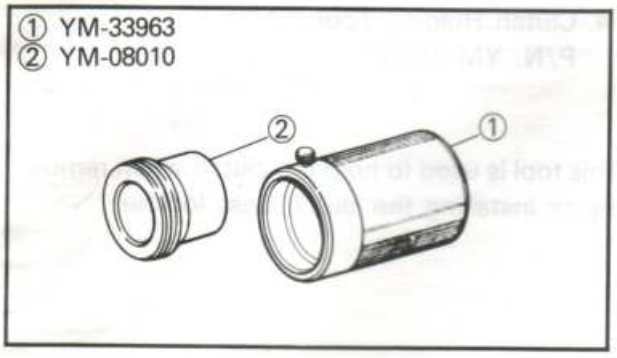
This tool is used to loosen and tighten the steering ring nut.

SPECIAL TOOLS



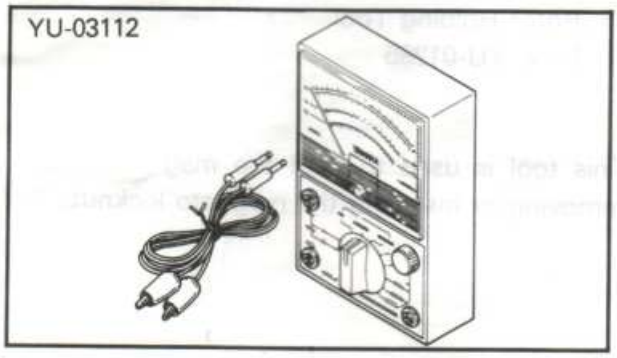
8. T-Handle
   P/N. YM-01326 ..... ①
   Damper Rod Holder 22 mm
   P/N. YM-33298 ..... ②

This tool is used to loosen and tighten the front fork cylinder holding bolt.



9. Front Fork Seal Driver (Weight)
   P/N. YM-33963 ..... ①
   Adapter (36 mm)
   P/N. YM-08010 ..... ②

This tools are used when installing the fork seal.



10. Pocket Tester
    P/N. YU-03112

This instrument is invaluable for checking the electrical system.

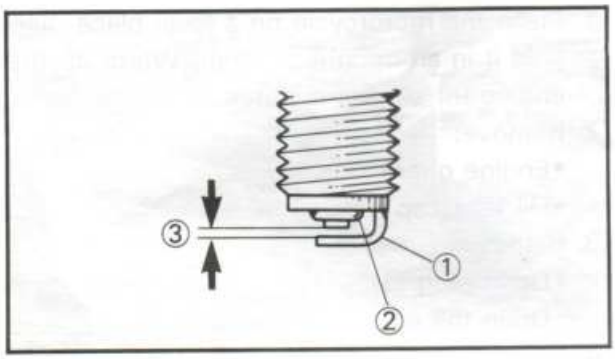
MINOR MAINTENANCE AND ADJUSTMENTS

SPARK PLUG

The spark plug is an important engine component and is easy to inspect. The condition of the spark plug can indicate something of the condition of the engine.

The ideal color on the white porcelain insulator around the center electrode is a medium to light tan color for a machine that is being ridden normally.

Do not attempt to diagnose any problems yourself. Instead, take the machine to a Yamaha dealer.



1. Remove:
   - Spark plug
2. Inspect:
   - Electrode ①
     Wear/Damage→Replace.
   - Insulator color ②
     Carbon deposits→Cleane.
3. Measure:
   - Plug gap ③
     Use Wire Gauge or Feeler Gauge.
     Out of specification→Regap.

Spark Plug Gap:
0.7 ~ 0.8 mm (0.028 ~ 0.032 in)

Standard Spark Plug:
BP6EV (N.G.K.)

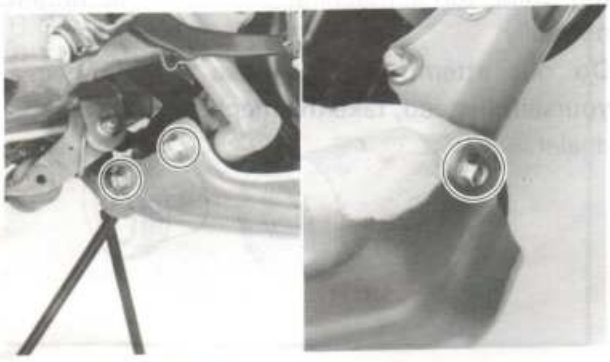
Before installing a spark plug, clean the gasket surface and plug surface.

4. Tighten:
   - Spark plug

20 Nm (2.0 m•kg, 14 ft•lb)

NOTE:

Finger-tighten the spark plug before torquing to specification.





TRANSMISSION OIL

Recommended Oil:
SAE 10W30 type SE motor oil
Oil Capacity:
Total Amount:
0.80 L (0.70 Imp qt, 0.85 US qt)
Periodic Oil Change:
0.75 L (0.66 Imp qt, 0.79 US qt)

Transmission Oil Replacement

NOTE:

Replace the transmission oil initially after one month; thereafter every one year.

1. Place the motorcycle on a level place, and hold it in an upright position. Warm up the engine for several minutes.
2. Remove:
   - Engine guard
   - Oil filler cap
3. Remove:
   - Drain plug ①

   Drain the oil.
4. Install:
   - Drain plug ①
   - Engine guard

Drain Plug/Engine Guard:
20 Nm (2.0 m•kg, 14 ft•lb)

5. Fill:
   - Crankcase

Transmission Oil:
0.75 L (0.66 Imp qt, 0.79 US qt)

CAUTION:

Do not allow foreign material to enter the crankcase.

6. Install:
   - Filler cap

IGNITION TIMING

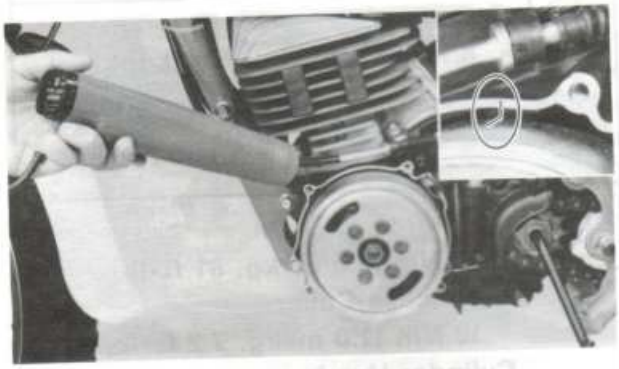
Checking

Ignition timing is checked with a Timing Light (YM-33277) by observing the position of the case mark and rotor mark.

NOTE:

If no tachometer and timing light are available, make a check using a dial gauge in the manner specified in "ADJUSTMENTS".





1. Check:
   - Ignition timing

Ignition timing adjustment steps:
- Remove the crankcase cover (L).
- Connect the timing light to the spark plug lead wire.
- Start the engine and keep it running at the specified speed. Use a Tachometer (YU-08036) for checking.

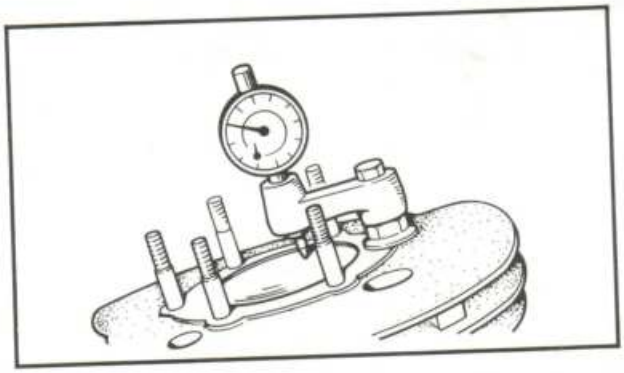
Specified speed: 2,500 r/min

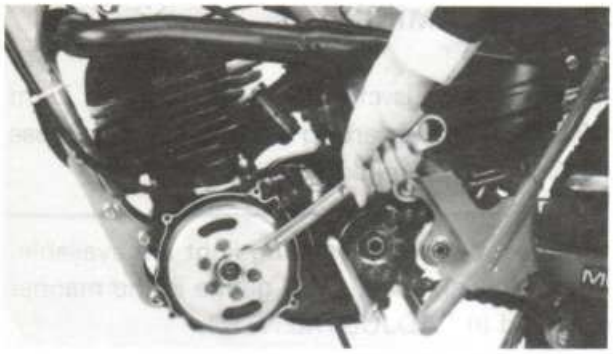
- While keeping the engine running at a specified speed, check that the rotor mark is aligned with the case mark. If they are not aligned, adjust the ignition timing.

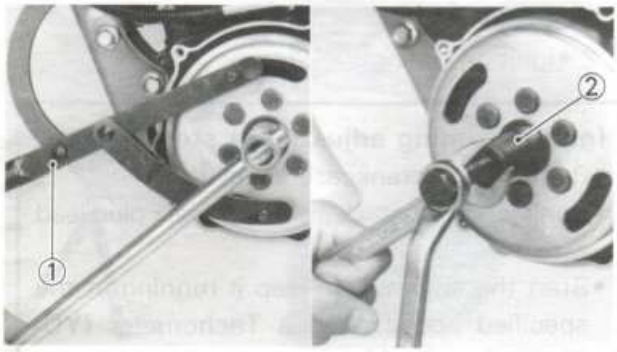
Adjustment

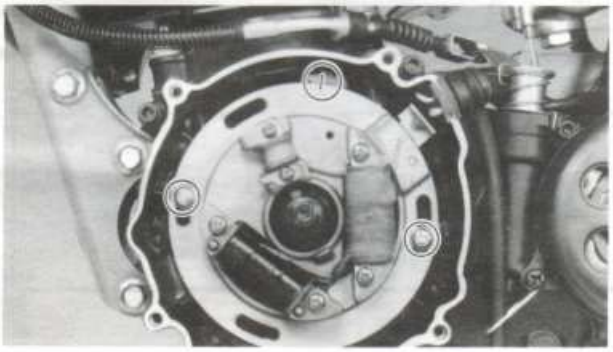
1. Adjust:
   - Ignition timing

Ignition timing adjustment steps:
- Remove the seat, fuel tank, exhaust pipe and cylinder head.
- Install the Dial Gauge Set (YU-01037, YU-03097) to the cylinder.
- Rotate the CDI magneto until piston is at T.D.C. (Top Dead Center). Set the zero on the Dial Gauge face to line up exactly with a dial gauge needle. Rotate magneto back and forth to be sure that indicator needle does not go past zero.









• Slowly turn the magneto clockwise until the Dial Gauge reads specified ignition timing.

Ignition Timing (B.T.D.C.):
2.6 mm (0.10 in)

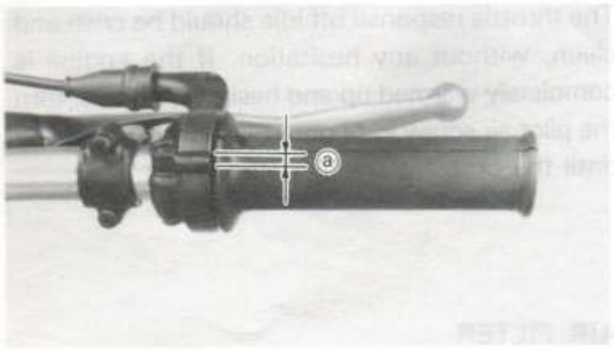
• Check the marks on the crankcase and magneto for alignment. If not aligned, adjust the ignition timing as follows:
a. Punch a new mark on the crankcase in line with the magneto mark.
b. Remove the magneto securing nut with the Rotor Holding Tool (YU-01235) ①.
c. Remove the magneto with the Rotor Puller (YM-01089) ②.
d. Loosen the stator set screws, and turn the stator until mark alignment is achieved.
e. Tighten the set screws. Torque the screws to specification.

Stator:
8 Nm (0.8 m•kg, 5.8 ft•lb)

• When reassembling the engine guard, reverse the above steps.

Magneto:
85 Nm (8.5 m•kg, 61 ft•lb)
Crankcase Cover:
10 Nm (1.0 m•kg, 7.2 ft•lb)
Cylinder Head:
22 Nm (2.2 m•kg, 16 ft•lb)
Exhaust Pipe:
15 Nm (1.5 m•kg, 11 ft•lb)
Fuel Tank:
6 Nm (0.6 m•kg, 4.3 ft•lb)

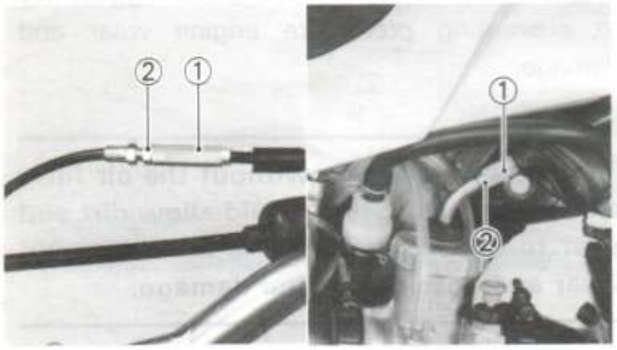
INSP ADJ



THROTTLE CABLE

1. Check:
   Throttle grip free play ⓐ
   Out of specification→Adjust.

Free Play: 3~5 mm (0.12~0.20 in)

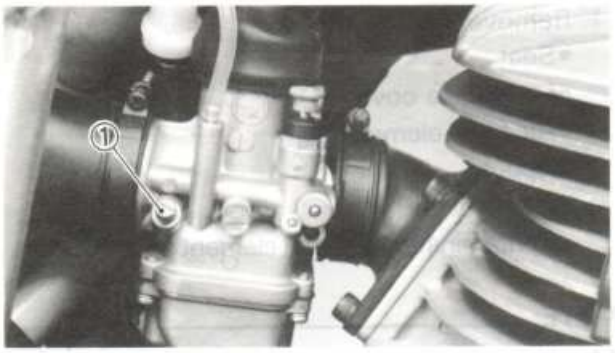


2. Adjust:
   • Throttle grip free play ⓐ
   (by turning the adjuster ① in or out)

NOTE:

After adjusting, turn the handlebar to right and left and make sure that the engine idling does not run faster.

② Locknut





IDLE SPEED

1. Start the engine and warm it up for a few minutes.
2. Adjust:
   • Idle speed

Idle speed adjusting steps:
- Screw in the pilot air screw ① until it is lightly seated.
- Back out by the specified number of turns.

Pilot Air Screw:
2 and 1/4 turns out

- Turn the screw ② until the idle is at the desired rpm.

Standard Idle Speed:
1,100±50 r/min

- Turn the pilot air screw ① in or out in 1/8-turn increments to achieve the highest rpm with just the pilot screw.
- Once again, turn the throttle stop screw ② to attain the desired idle rpm.

2

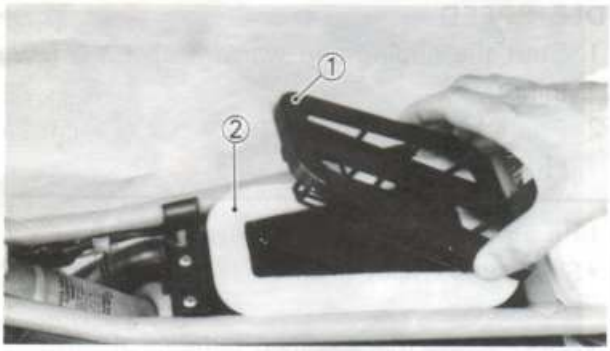
The throttle response off idle should be crisp and clean, without any hesitation. If the engine is completely warmed up and hesitates off idle, turn the pilot air screw in or out in 1/8-turn increments until the problem is eliminated.

AIR FILTER

Proper air filter maintenance is the biggest key to preventing premature engine wear and damage.

CAUTION:

Never run the engine without the air filter element in place; this would allow dirt and dust to enter the engine and cause rapid wear and possible engine damage.

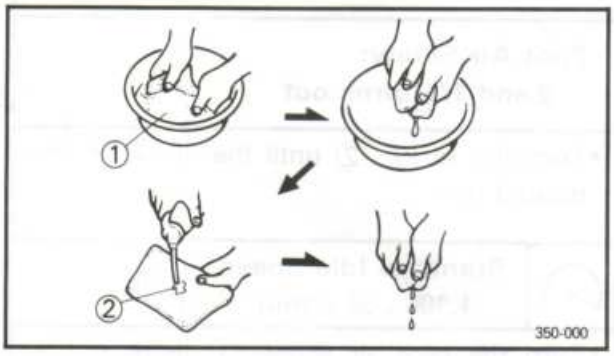


1. Remove:
   - Seat
   - Filter case cover ①
   - Air filter element ②
2. Inspect:
   - Element

   Contamination → Clean element with solvent.

NOTE:

After cleaning, remove the remaining solvent ① by squeezing the element.



3. Apply:
   - Foam-air-filter oil ②

   (to the element)

NOTE:

Sqeeze out the excess oil. Element should be wet but not dripping.

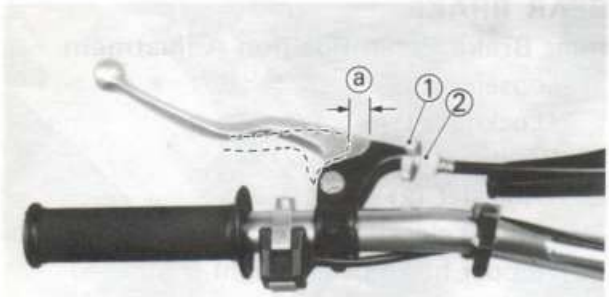


4. Apply:
   - Lightweight lithium-soap base grease

   (to the sealing edge)
5. Install:
   - Air filter element
   - Filter case cover
   - Seat

NOTE:

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



CLUTCH

To avoid clutch slipping or dragging, the clutch mechanism and cable must be adjusted correctly.

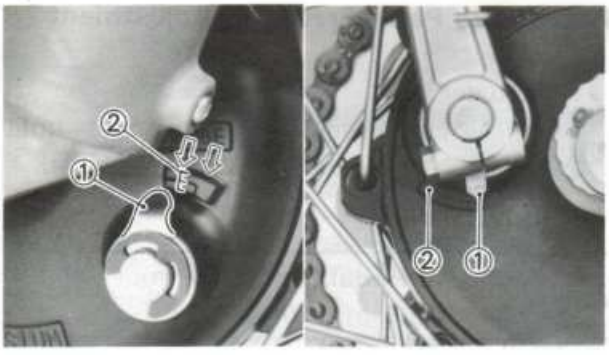
1. Loosen:
   - Adjuster locknut ①
2. Adjust:
   - Free play ⓐ

   Turn the adjuster ② clockwise or counterclockwise until proper lever free play is attained.

Clutch Lever Free Play:
2 ~ 3 mm (0.08 ~ 0.12 in)

3. Tighten:
   - Locknut

For the mechanical adjustment, refer to of "Clutch mechanism adjustment".

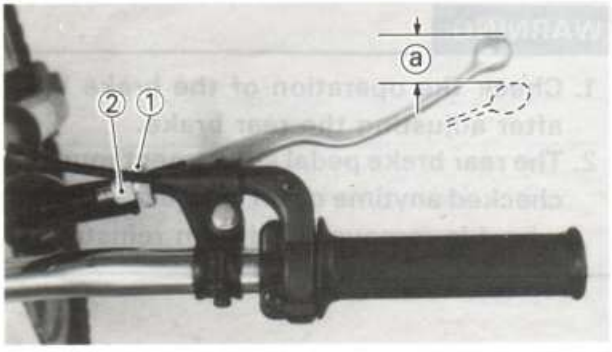


BRAKE LINING INSPECTION

1. Check:
   - Brake shoe

   Wear → Replace.

To check, see the wear indicator ① position while operating the brake. If the indicator reaches to the wear limit line ②, replace the brake shoes as a set.

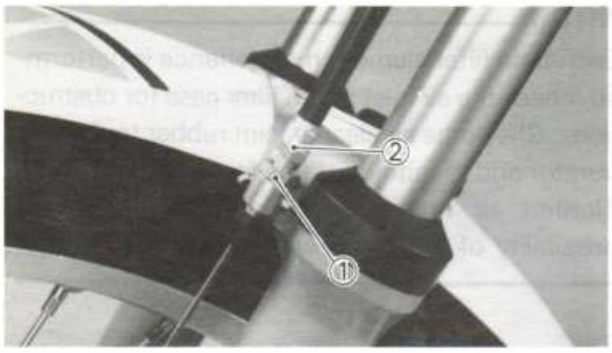


FRONT BRAKE

Free Play Adjustment

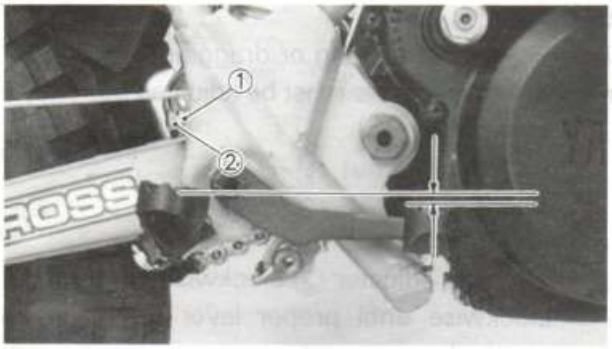
1. Loosen:
   - Locknut ①
2. Adjust:
   - Free play ⓐ

   Turn the cable length adjsuter ② in or out until adjustment is suitable.



Front Brake Lever Free Play:
5 ~ 8 mm (0.2 ~ 0.3 in)

3. Tighten:
   • Locknut ①



REAR BRAKE

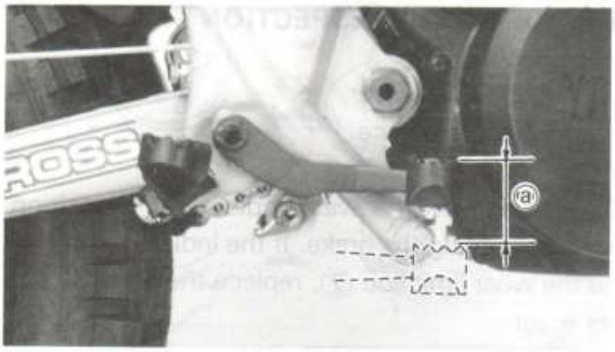
Rear Brake Pedal Position Adjustment

1. Loosen:
   • Locknut ①
2. Rotate:
   • Adjuster ②
   Turn it clockwise or counterclockwise until proper brake pedal height is attained.

Brake Pedal Height:
0 mm (0 in)

WARNING:

After adjusting the pedal height, adjust the brake pedal free play.



Rear Brake Pedal Free Play Adjustment

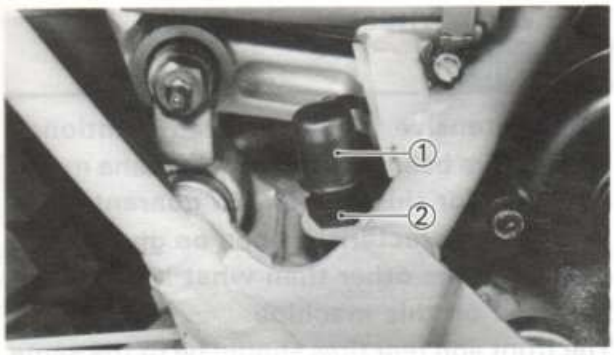
1. Rotate:
   • Adjuster ①
   Turn it clockwise or counterclocwise until proper brake pedal free play is attained.

Brake Pedal Free Play ⓐ:
10 ~ 15 mm (0.4 ~ 0.6 in)



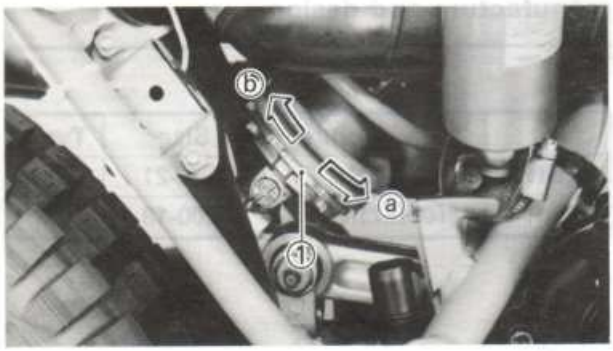
WARNING:

1. **Check the operation of the brake light after adjusting the rear brake.**
2. **The rear brake pedal adjustment must be checked anytime chain is adjusted or rear wheel is removed and then reinstalled.**



Brake Light Switch Adjustment

The brake light switch is operated by movement of the brake pedal. To adjsut, hold the main body ① of the switch with your hand so it does not rotate and turn the adjusting nut ②. Proper adjustment is achieved when the brake light comes on just before the brake begins to take effect.



REAR SHOCK ABSORBER ADJUSTMENT

The spring preload of the rear shock absober can be adjusted to suit rider's preference, weight, and the course conditions.

Spring Preload

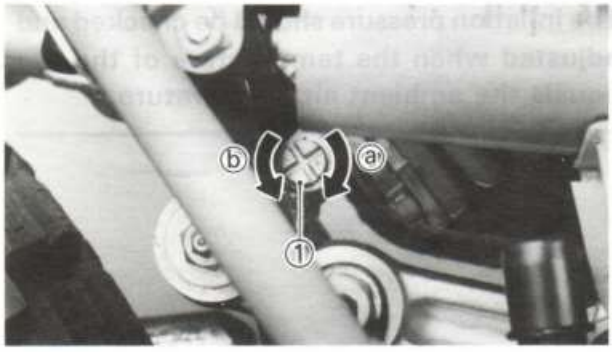
1. Adjust:
   - Spring preload

   To increase the preload, turn the adjuster ① counterclockwise. To decrease the preload, turn the adjuster ① clockwise.

ⓐ Increase spring preload
ⓑ Decrease spring preload

NOTE:

When adjusting, use the special wrench which is included in the owner's tool kit.



Rebound Damping

1. Adjust
   - Rebound Damping

   To increase rebound damping, turn the adjuster ① clockwise. To decrease, turn the adjuster ① counterclockwise.

ⓐ Increase rebound damping
ⓑ Decrease rebound damping

STD Setting:
10 clicks out from seated position
MIN. Setting:
20 clicks out
MAX. Setting:
0

CAUTION:

Never attempt to turn the adjuster beyond the maximum or minimum setting.

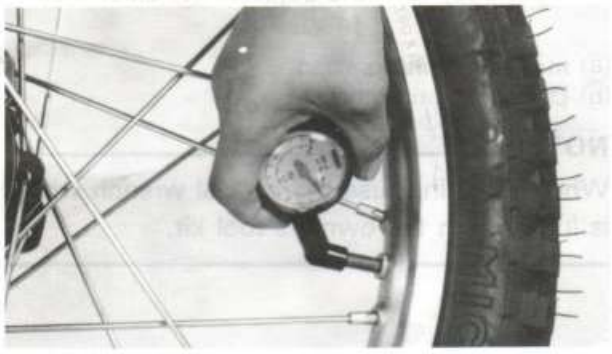
2

TIRE AND WHEEL

WARNING:

After extensive tests, the tires mentioned below have been approved by Yamaha motor Co., Ltd. for this model. No guarantee for handling characteristics can be given if tire combinations other than what is approved are used on this machine.
The front and rear tires should be of the same manufacture and design.

	Manufacturer	Size	Type
FRONT	MICHELIN	2.75-21	Trial
REAR	MICHELIN	4.00-18	Trial

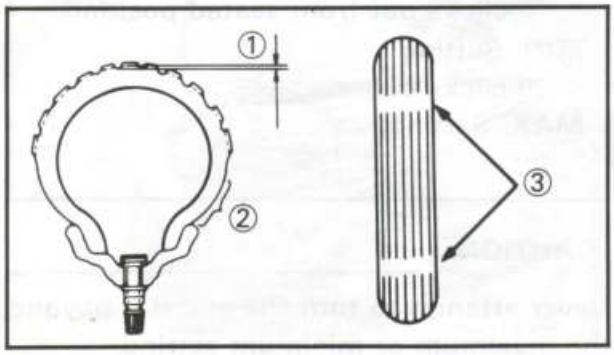


1. Measure:
   • Tire pressure
   Out of specification → Adjust.

Tire Air Pressure:
FRONT: 39.2 kPa (0.4 kg/cm², 6 psi)
REAR: 29.4 kPa (0.3 kg/cm², 4 psi)

WARNING:

Tire inflation pressure should be checked and adjusted when the temperature of the tire equals the ambient air temperature.



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

Minimum Tire Tread Depth:
1.0 mm (0.04 in)

① Tread depth
② Side wall
③ Wear indicator

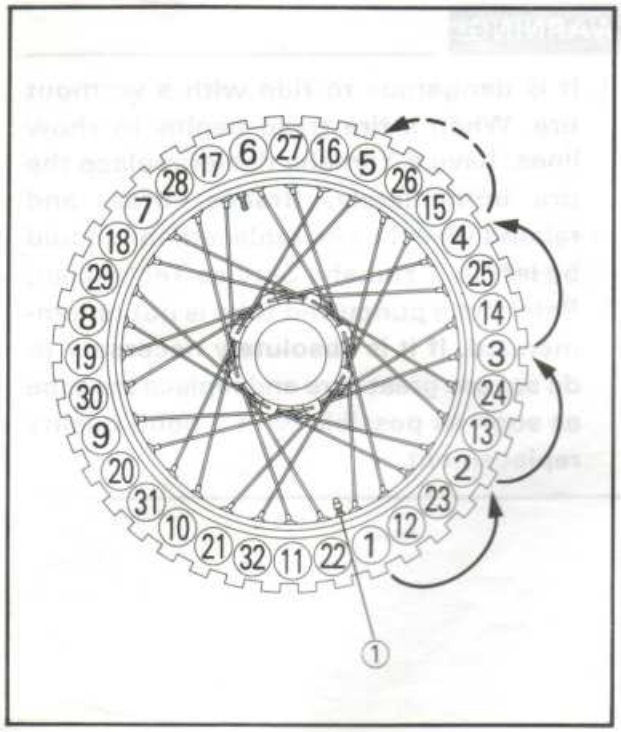
WARNING:

1. **It is dangerous to ride with a wornout tire. When a tire tread begins to show lines, have a Yamaha dealer replace the tire immediately. Brakes, tires, and related wheel parts replacement should be left to a Yamaha Service Technician.**
2. **Patching a puncutred tube is not recommended. If it is absolutely necessary to do so, use great care and replace the tube as soon as possible with a good quality replacement.**

3. Inspect:
   - Rim
     Damage/Bends → Replace.

WARNING:

- **Always inspect the wheels before a ride. Check for cracks, bends, or warpage of the wheels; be sure the spokes are tight and undamaged. If any abnormal condition exists in a wheel consult a Yamaha dealer. Do not attempt even small repairs to the wheel. If a wheel is deformed or cracked, it must be replaced.**
- **Tires and wheels should be balanced whenever either one is changed or replaced. Failure to have a wheel balanced can result in poor performance, adverse handling characteristics, and shortened tire life.**
- **After installing a tire, ride conservatively to allow the tire to seat itself on the rim properly. Failure to allow proper seating may cause tire failure, resulting in damage to the machine and injury to the rider.**



4. Check:
   • Spokes
   Loose → Tighten.

Spoke retightening:
- Perform the retightening at an interval of three spokes as shown below.
- The retightening will be completed at No. 32 after three turns of the wheel. If there still spokes that are short of torque, then repeat the same procedure.

Nipple:
6 Nm (0.6 m•kg, 4.3 ft•lb)

① Air valve

DRIVE CHAIN

* For the inspection of the sprocket and chain, refer to 4-5.

Drive Chain Slack Check

NOTE:

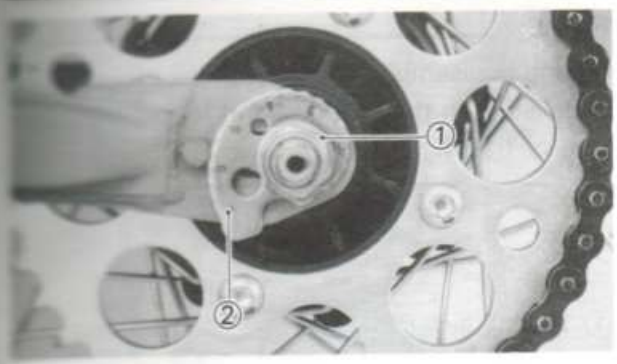
Before checking and/or adjusting, rotate the rear wheel through several revolutions and check the tension several times to find the tightest point. Check and/or adjust chain slack with rear wheel in this "tight chain" position.



1. Hold the machine standing vertically without rider on it.
2. Measure:
   • Chain slack ⓐ
   (at the position shown in the photograph.)
   Out of specification → Adjust chain.

Chain Slack:
20 ~ 30 mm (0.8 ~ 1.2 in)

① Chain tensioner



Drive Chain Slack Adjustment

1. Loosen:
   - Axle nut ①
   - Rear brake adjuster
2. Adjust:
   - Chain slack

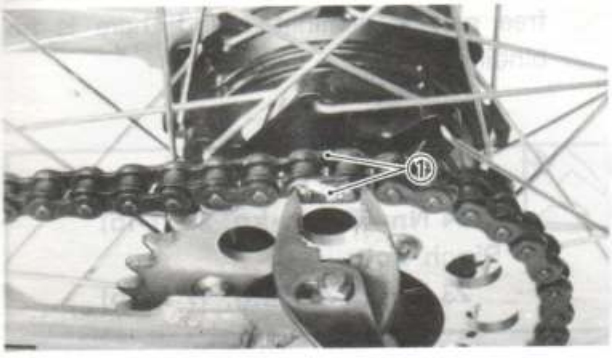
   Turn the chain puller ② both left and right, until axle is situated in same puller slot position on each side.
3. Tighten:
   - Axle nut

Axle Nut:
85 Nm (8.5 m•kg, 61 ft•lb)

4. Adjust:
   - Brake pedal free play

WARNING:

Check the operation of the brake light after adjusting the rear brake.



Drive Chain Maintenance

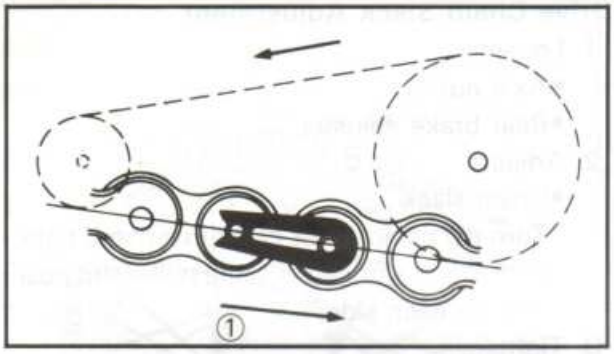
1. Remove:
   - Master link clip ①
   - Joint
   - Drive chain



2. Clean:
   - Drive chain

   (Place it in solvent, and brush off as much dirt as possible. Then remove the chain from the solvent and dry the chain.)
3. Lubricate:
   - Drive chain

SAE 30 ~ 50 Motor Oil

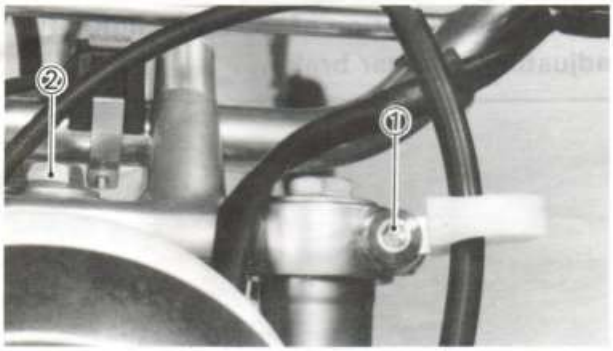


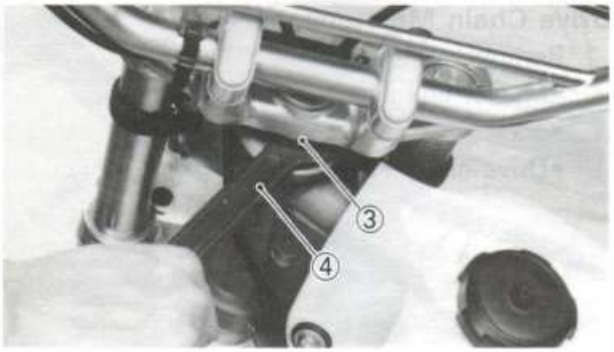
NOTE:

During reassembly, the master link clip must be installed with the rounded end facing the direction of travel.

① Turning direction







STEERING HEAD

Steering Head Inspection

1. Elevate the front wheel by placing a suitable stand under the engine.
2. Check:
   - Steering assembly bearings

   Grasp the bottom of the forks and gently rock the fork assembly back and forth.
   Looseness → Adjust steering head.

Steering Head Adjustment

1. Loosen:
   - Upper front fork pinch bolts ①
   - Steering stem bolt ②
2. Tighten:
   - Ring nut ③

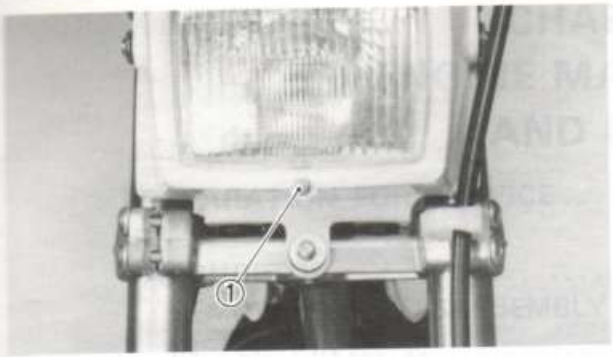
   Use the Steering Nut Wrench ④ (YU-01268).

   Tighten the ring nut beneath the handle crown with the steering nut wrench until the free play is eliminated and there is no binding.

Fitting Bolt:
54 Nm (5.4 m•kg, 39 ft•lb)
Pinch Bolt:
23 Nm (2.3 m•kg, 17 ft•lb)

CAUTION:

After a short running period, check steering head for proper adjustment.



HEADLIGHT ADJUSTMENT

1. Rotate:
   - Vertical adjusting screw ①

Vertical adjustment of headlight beam	
Adjusting screw	Beam direction
Turn clockwise	↑ To raise
Turn counterclockwise	↓ To lower













ENGINE MAINTENANCE AND REPAIR

PREPARATION FOR SERVICE

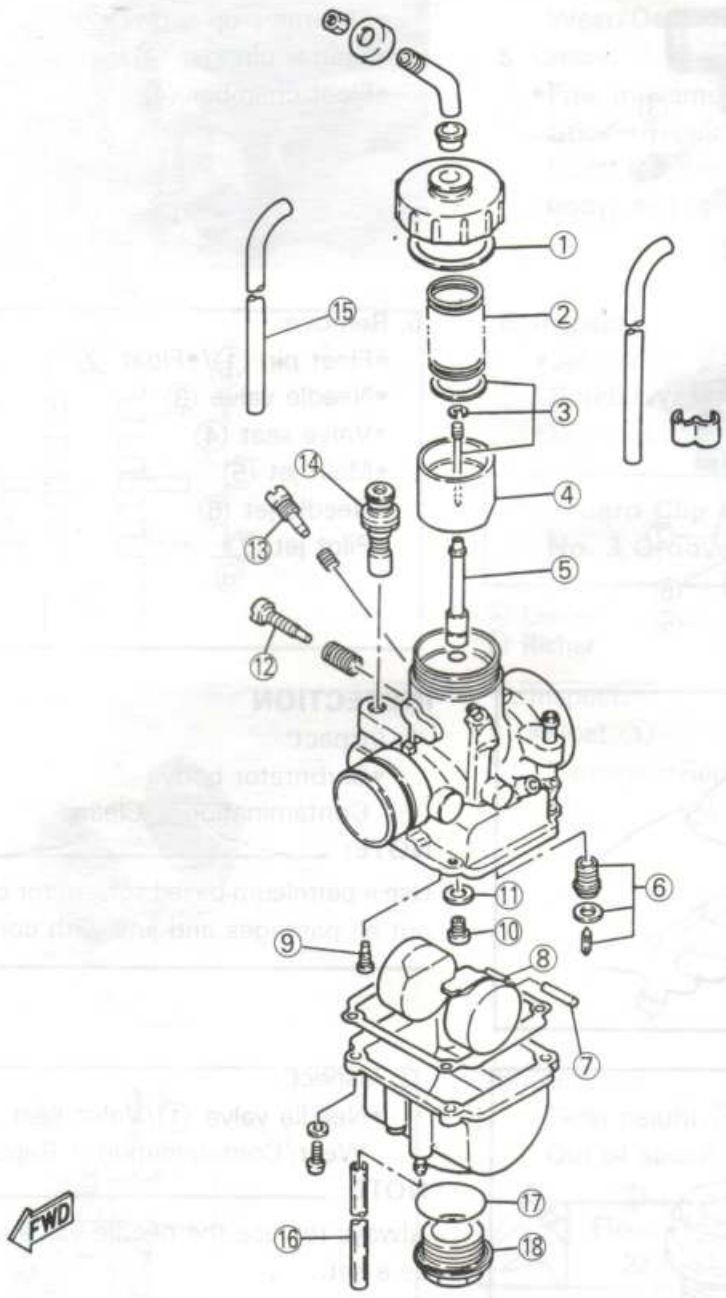
Prior to beginning any work on the engine, take note of the following bits of advice; they will greatly facilitate your engine maintenance and repair:

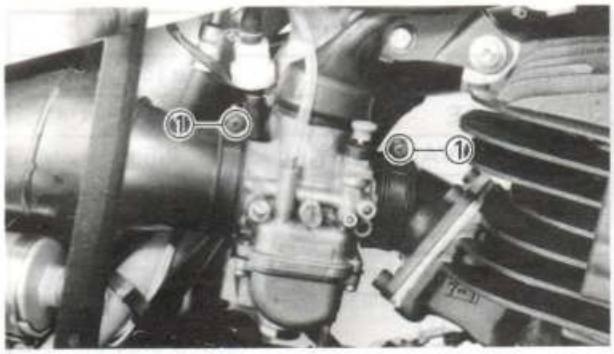
- Clean your machine as described in the General Information section entitled, "Cleaning and Storage";
- Group the parts of each component on individual trays, and arrange the parts in the order of their removal;
- When replacing parts, always use the genuine Yamaha article to maintain optimum performance, durability, and safety;
- All gaskets and seals should be replaced during engine work, and all gasket surfaces should be clean;
- During assembly, always apply oil or grease to bearing surfaces to protect them upon initial start-up;
- Replace all circlips which are distorted from use or disassembly;
- Always replace cotter pins and piston pin clips after one use;
- Always clean and oil the threads of nuts, bolts, and screws during assembly, and torque them to the proper specifications whenever possible.

CARBURETOR

① O-ring
② Throttle valve spring
③ Needle set
④ Throttle valve
⑤ Needle jet
⑥ Valve seat assembly
⑦ Float pin
⑧ Float
⑨ Pilot jet
⑩ Main jet
⑪ Fuel damper
⑫ Throttle stop screw
⑬ Air screw
⑭ Starter plunger
⑮ Air vent pipe
⑯ Over flow pipe
⑰ O-ring
⑱ Drain plug

SPECIFICATIONS	
MAIN JET	#145
JET NEEDLE	5C95-3
THROTTLE VALVE	2.5
NEEDLE JET	S-00
PILOT JET	#37
PILOT SCREW	2-1/4 TURNS OUT
FLOAT HEIGHT	22±1.0 mm (0.87±0.04 in)



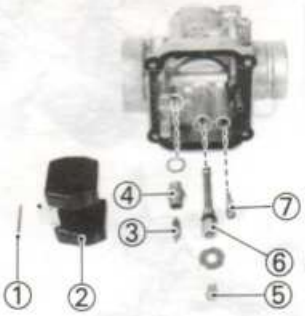


REMOVAL AND DISASSEMBLY

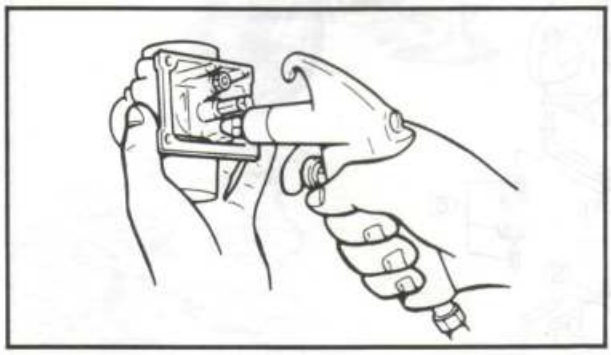
1. Loosen:
   - Clamps ①
2. Disconnect:
   - Fuel hose
3. Remove:
   - Carburetor assembly



4. Remove:
   - Pilot air screw ①
   - Throttle stop screw ②
   - Starter plunger ③
   - Float chamber ④



5. Remove:
   - Float pin ①/•Float ②
   - Needle valve ③
   - Valve seat ④
   - Main jet ⑤
   - Needle jet ⑥
   - Pilot jet ⑦

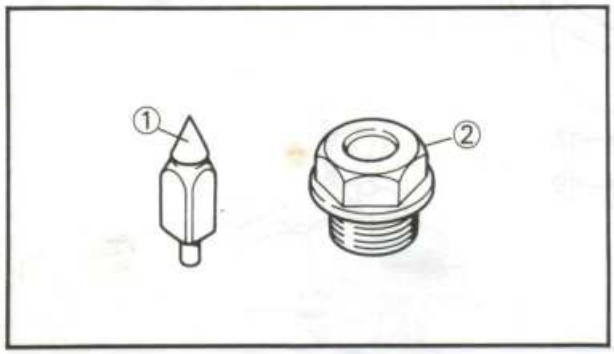


INSPECTION

1. Inspect:
   - Carburetor body
     Contamination → Clean.

NOTE:

Use a petroleum based solvent for cleaning. Blow out all passages and jets with compressed air.



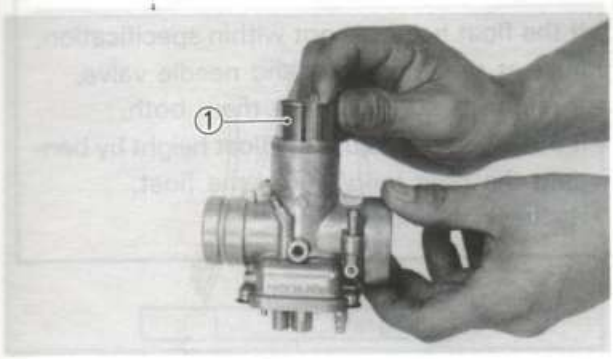
2. Inspect:
   - Needle valve ①/Valve seat ②
     Wear/Contamination → Replace.

NOTE:

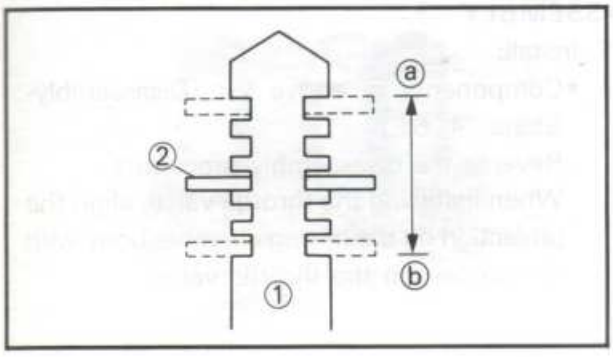
Always replace the needle valve and valve seat as a set.



3. Inspect:
   - Pilot air screw ①/Throttle stop screw ②/Starter plunger ③
     Wear/Contamination → Replace.



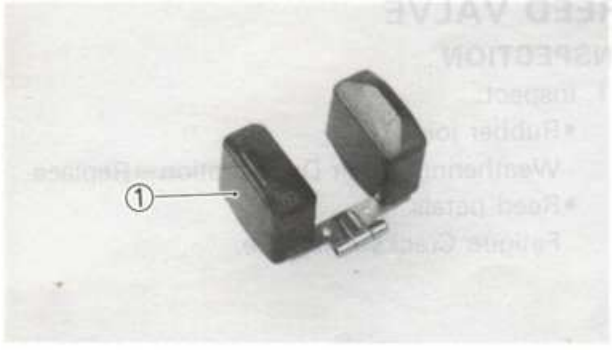
4. Inspect:
   - Throttle valve ①
     Wear/Damage → Replace.
5. Check:
   - Free movement
     Stick → Repair or replace.
     Insert the throttle valve into the carburetor body, and check for free movement.



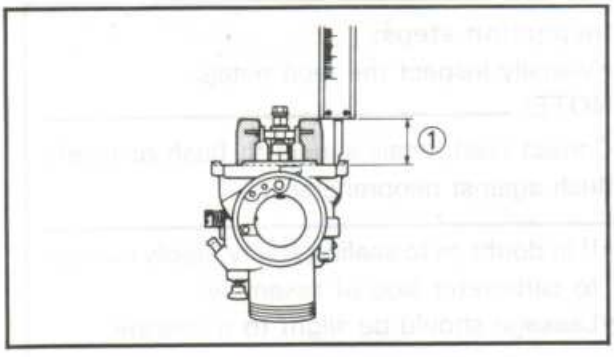
6. Inspect:
   - Jet needle ①
     Bends/Wear → Replace.
   - Clip position ②

Standard Clip Position:
No. 3 Groove

ⓐ Leaner
ⓑ Richer

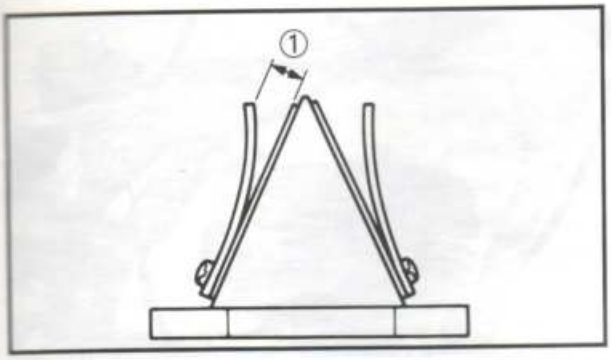


7. Inspect:
   - Float ①
     Damage → Replace.



8. Measure:
   - Float height ①
     Out of specification → Adjust.

Float Height (F.H.):
22.0 ± 1.0 mm (0.87 ± 0.04 in)



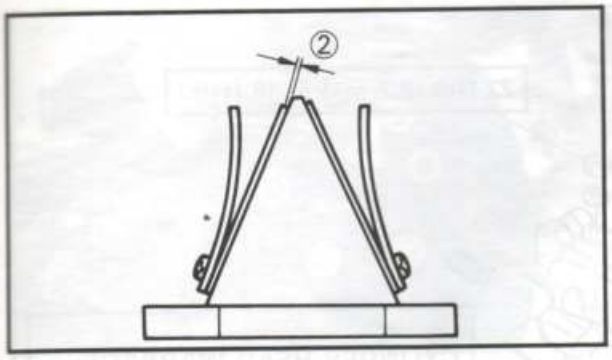
2. Measure:
   - Valve stopper height ①

   Out of specification → Adjust stopper/ Replace valve stopper.

Valve Stopper Height:
6.0 ± 0.3 mm (0.236 ± 0.012)

NOTE:

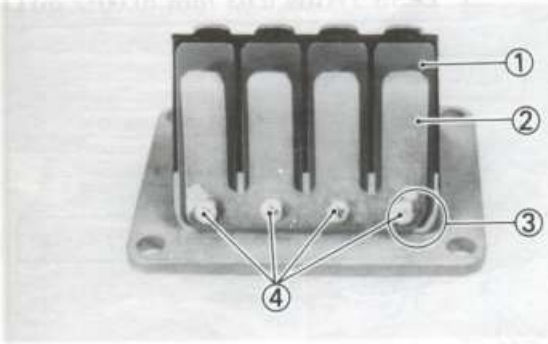
If it is 0.4 mm (0.016 in) more or less than specified, replace the valve stopper.



3. Measure:
   - Reed valve bending ②

   Out of specification → Replace.

Reed Valve Bending Limit:
0.6 mm (0.024 in)



ASSEMBLY

1. Install:
   - Reed valve ①
   - Reed valve stopper ②

NOTE:

Note the cut ③ in the lower corner of the reed and stopper plate.

2. Tighten:
   - Reed valve securing screws ④

   Use LOCTITE®

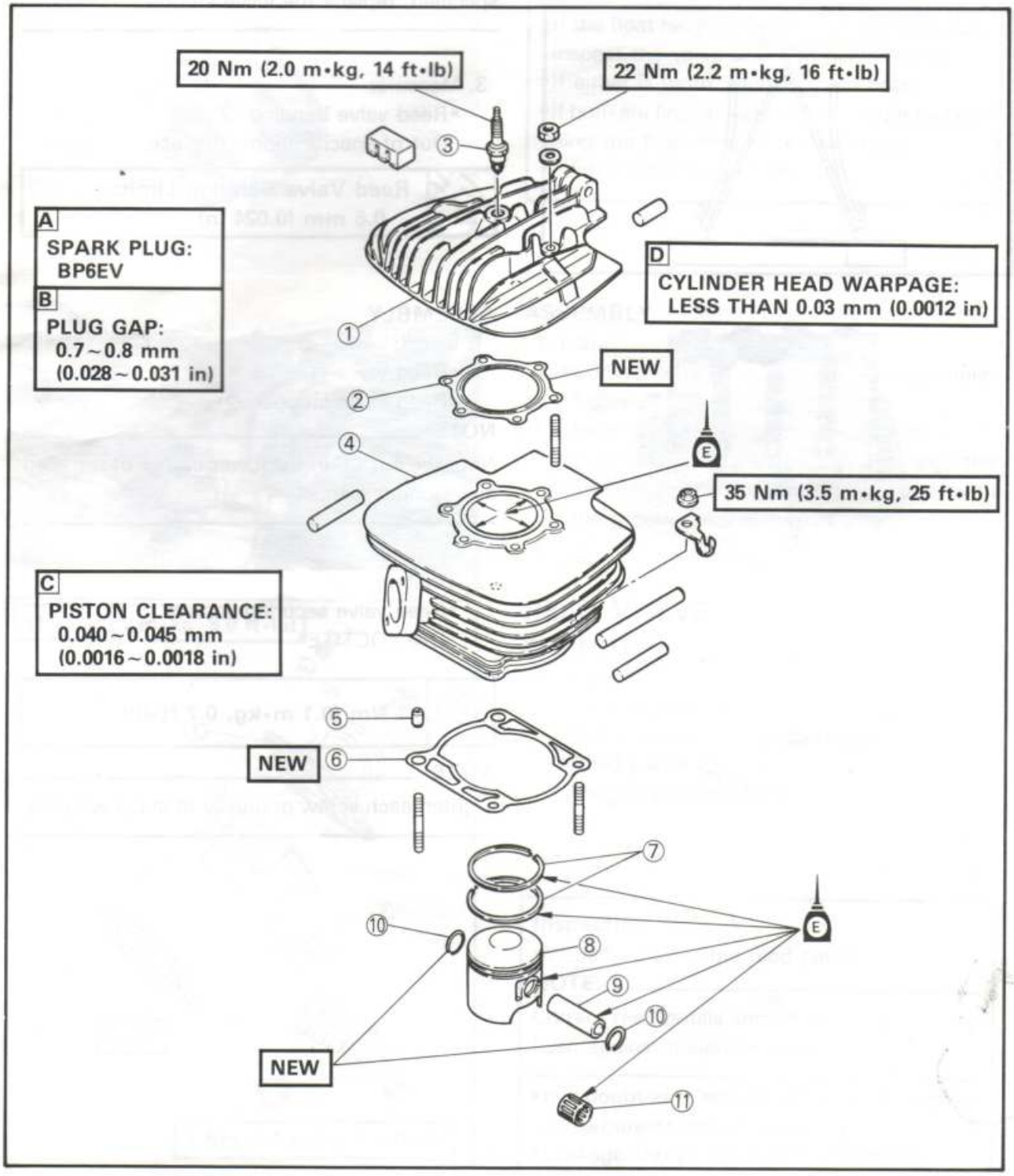
1 Nm (0.1 m•kg, 0.7 ft•lb)

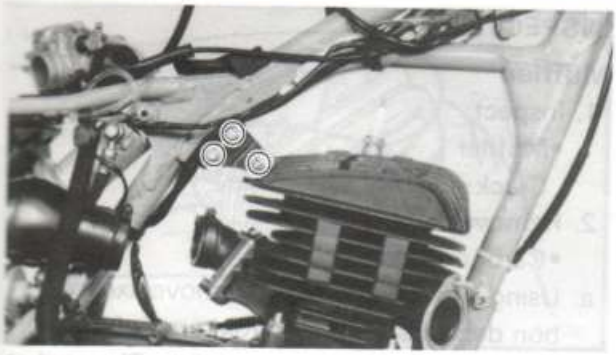
NOTE:

Tighten each screw gradually to avoid warping.

CYLINDER HEAD/CYLINDER/PISTON

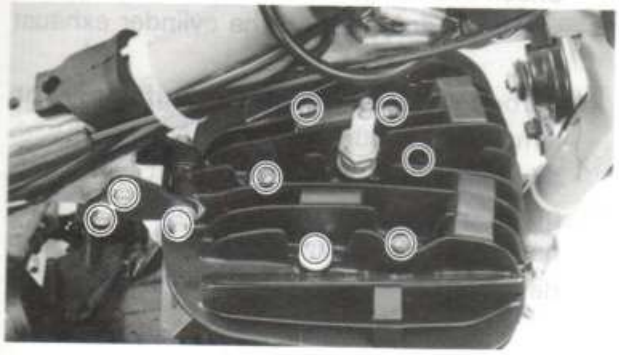
① Cylinder head
② Cylinder head gasket
③ Spark plug
④ Cylinder
⑤ Dowel pin
⑥ Cylinder gasket
⑦ Piston ring set
⑧ Piston
⑨ Piston pin
⑩ Piston pin clip
⑪ Small end bearing





REMOVAL

1. Remove:
   - Seat
   - Fuel tank
   - Exhaust pipe
   - Carburetor
   - Spark plug cap
   - Cylinder head holding bracket

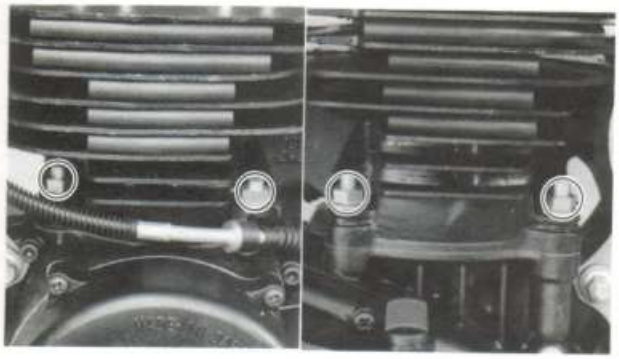


2. Loosen:
   - Cylinder head nuts

CAUTION:

The cylinder head holding nuts should be loosened 1/4 turn each time, and remove.

3. Remove:
   - Cylinder head
   - Cylinder head gasket



4. Loosen:
   - Cylinder holding nuts (in a crisscross pattern)
5. Remove:
   - Cylinder
   - Cylinder gasket
   - Dowel pins



6. Remove:
   - Piston pin clip ①

NOTE:

Before removing the pin clip, cover the crankcase with clean towel or rag so you will not accidentally drop the pin clip and material into the crankcase.

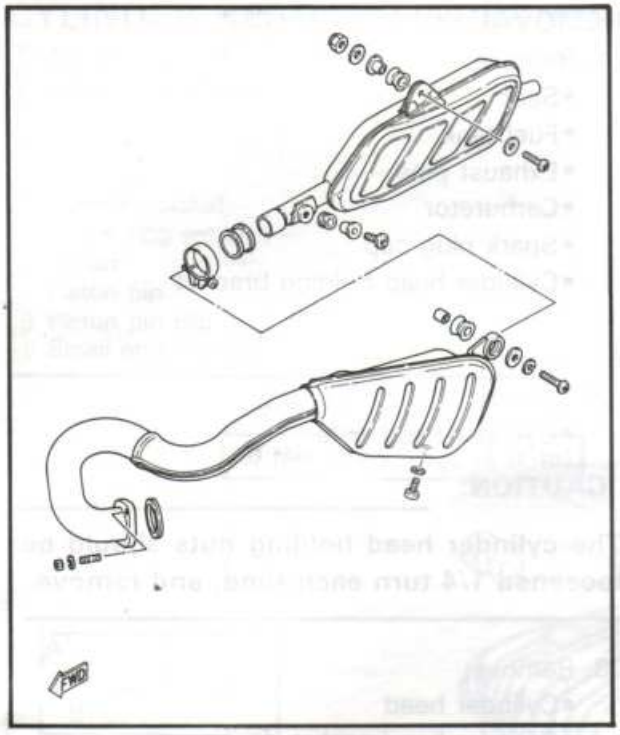


7. Remove:
   - Piston pin
   - Piston

CAUTION:

Do not use a hammer to drive the piston pin out.

   - Piston rings



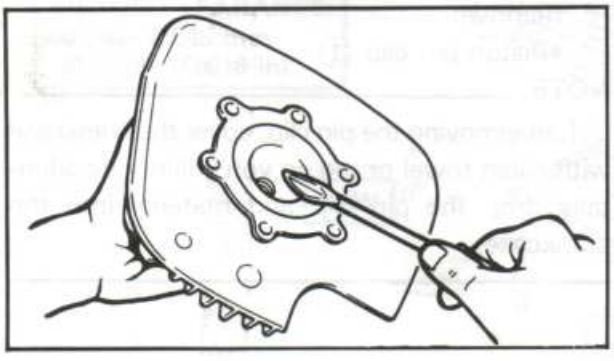
INSPECTION

Muffler

1. Inspect:
   - Muffler
     Crack → Repair or replace
2. Remove:
   - Carbon deposits

a. Using a rounded scraper, remove excess carbon deposits from manifold area of muffler. Check muffler gasket condition. The gasket seat is located around the cylinder exhaust port.

b. Carbon deposits within the muffler may be removed by lightly tapping the outer shell with a hammer and then blowing out with compressed air. Heavy wire, such as a coat hanger, may be inserted to break loose deposits.

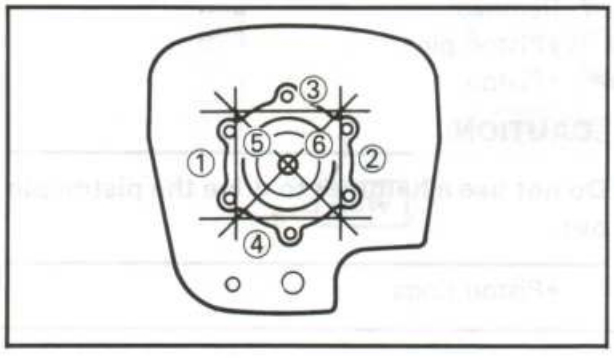


Cylinder Head

1. Remove:
   - Carbon depsits
     Use a rounded scraper

NOTE:

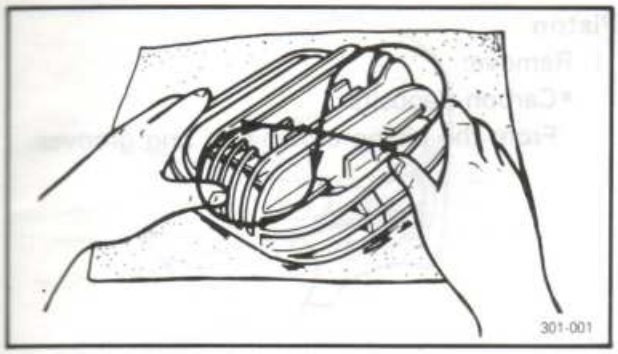
Take care to avoid damaging the spark plug threads. Do not use a sharp instrument. Avoid scratching the aluminum.



2. Inspect:
   - Cylinder head warpage.
     Out of specification → Re-surface.

Warpage measurement and re-surfacement steps:

- Attach a straightedge and a thickness gauge on the cylinder head.



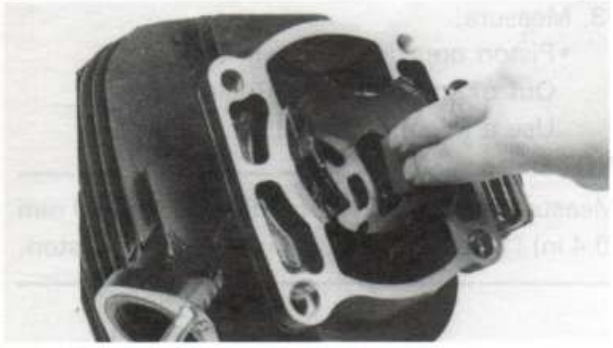
•Measure the warpage.

Warpage Limit:
0.03 mm (0.0012 in)

•If the warpage is out of specification, resurface the cylinder head.
•Place a 400 ~ 600 grit wet sandpaper on the surface plate, and re-surface the head using a figure-eight sanding pattern.

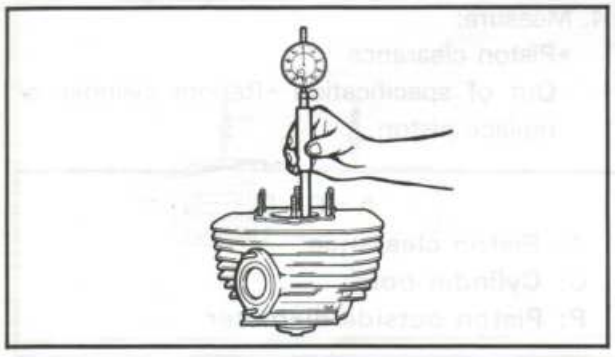
NOTE:

Rotate the head several times to avoid removing too much material from one side.

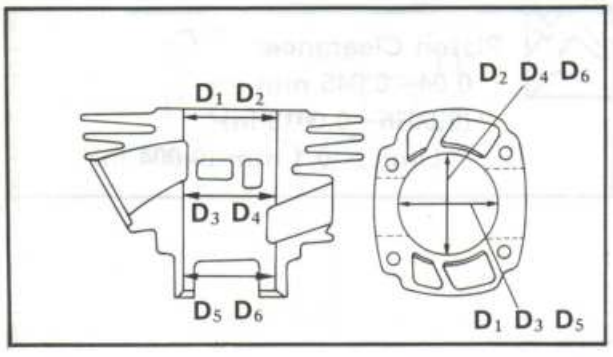


Cylinder

1. Remove:
   •Carbon deposits
   Use a rounded scraper.
2. Inspect:
   •Cylinder wall
   Wear/Scratch → Rebore or replace.

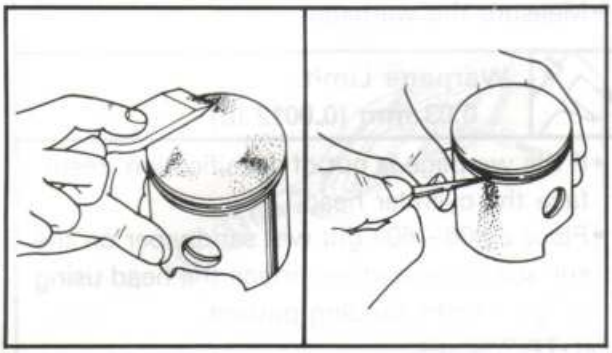


3. Measure:
   •Cylinder bore "C"
   Use a Cylinder Bore Gauge
   Out of specification → Rebore.



	Standard	Wear limit
Cylinder bore "C"	80.00 mm (3,150 in)	80.10 mm (3,154 in)
Taper "T"	—	0.05 mm (0.002 in)
Out of round "R"	—	0.01 mm (0.0004 in)

C = Maximum D
T = (Maximum D_1 or D_2) − (Minimum D_5 or D_6)
R = (Maximum D_1, D_3 or D_5) − (Minimum D_2, D_4 or D_6)



Piston

1. Remove:
   - Carbon deposits

   From the piston crown and ring grooves.

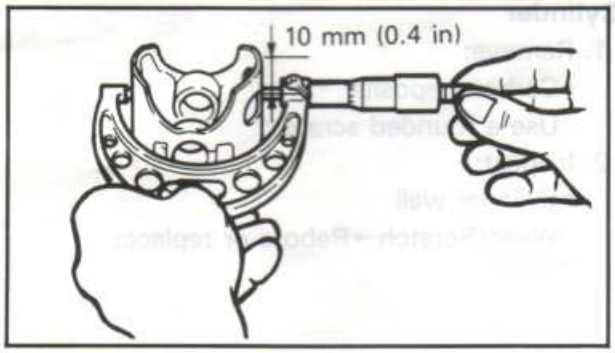


2. Remove:
   - Score marks

   From the piston wall.
   Use a 600 ~ 800 grit wet sandpaper.

NOTE:

Sand in a crisscross pattern. Do not sand excessively.



3. Measure:
   - Piston outside diameter "P"

   Out of specification → Replace.
   Use a Micrometer.

NOTE:

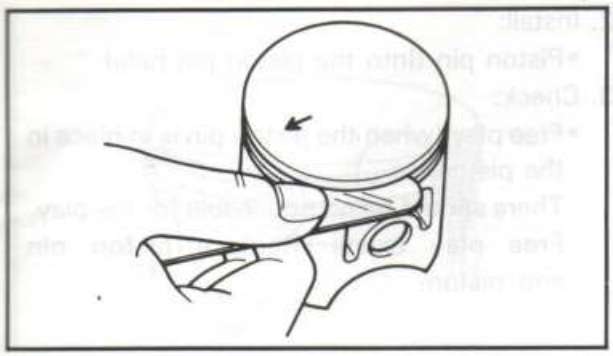
Measurement should be made at a point 10 mm (0.4 in) ① above the bottom edge of the piston.

4. Measure:
   - Piston clearance

   Out of specification → Rebore cylinder or replace piston.

A = C − P
A: Piston clearance
C: Cylinder bore
P: Piston outside diameter

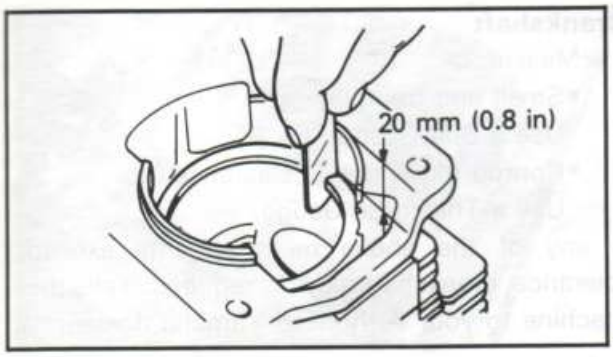
Piston Clearance:
0.04 ~ 0.045 mm
(0.0016 ~ 0.0018 in)
<Limit> 0.1 mm (0.004 in)



5. Measure:
   - Side clearance

   Out of specification → Replace piston and/or rings.

	Side Clearance
Top	0.04 ~ 0.08 mm (0.0016 ~ 0.0032 in)
Second	0.03 ~ 0.07 mm (0.0012 ~ 0.0028 in)
<Limit>	0.12 mm (0.0047 in)

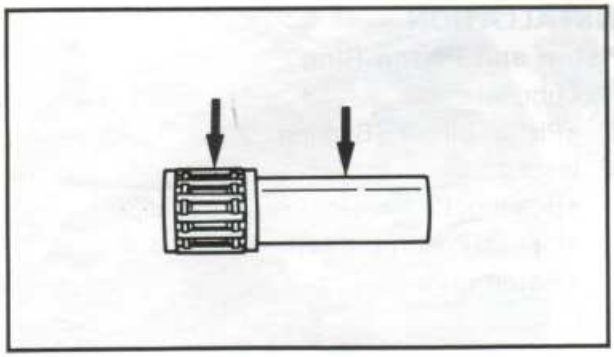


6. Install:
   - Piston ring (Into the cylinder)

   Push the ring with the piston crown.
7. Measure:
   - End gap

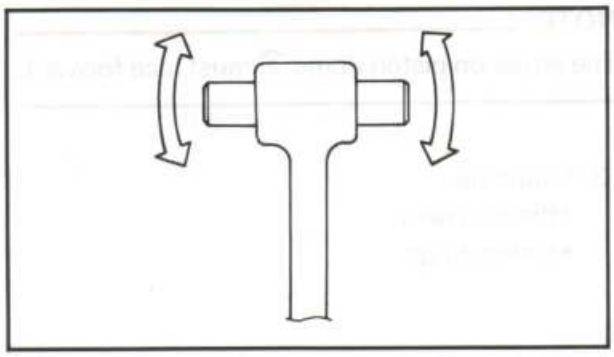
   Out of specification → Replace
   Use a Feeler Gauge.

Ring End Gap (Installed):
0.30 ~ 0.45 mm
(0.012 ~ 0.018 in)
Limit: 1.0 mm (0.04 in)



8. Inspect:
   - Piston pin and bearing

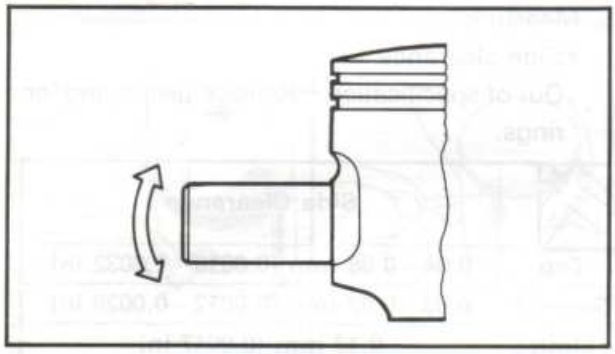
   Signs of heat discoloration → Replace.
9. Lubricate:
   - Piston pin (lightly)
   - Bearing



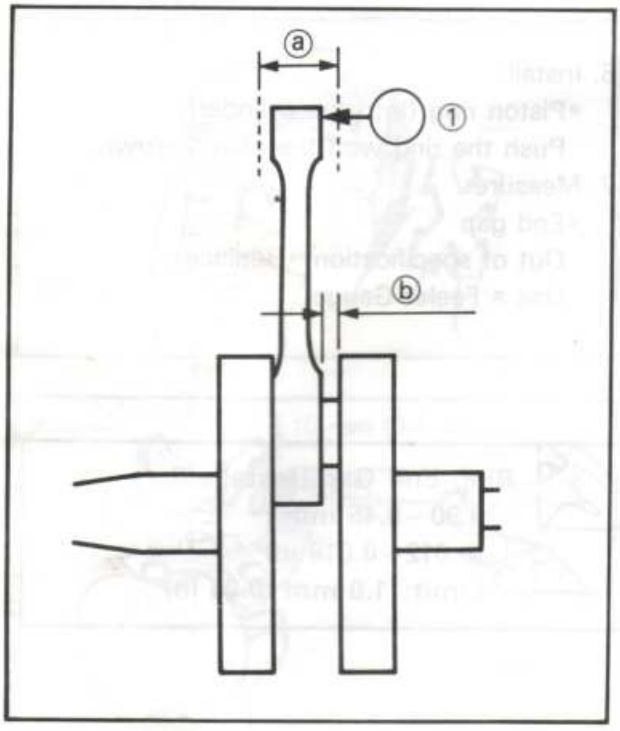
10. Install:
    - Piston pin
    - Bearing

    (Into the small end of connecting rod)
11. Check:
    - Free play

    There should be no noticeable for the play.
    Free play exists → Inspect the connecting rod for wear/Replace the pin and/or connecting rod as required.



12. Install:
    - Piston pin (Into the piston pin hole)
13. Check:
    - Free play (when the piston pin is in place in the piston)
      There should be no noticeable for the play.
      Free play exists→Replace piston pin and/piston.

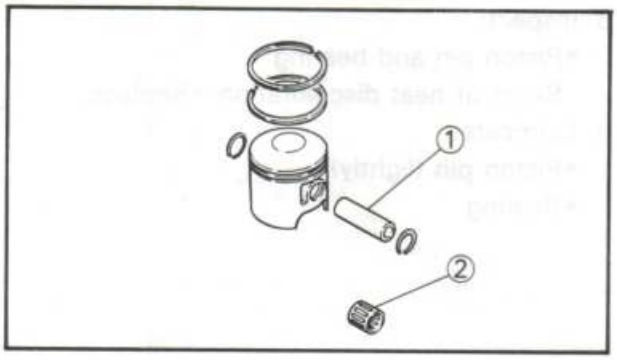


Crankshaft

1. Measure:
    - Small end free play ⓐ
      Use a Dial Gauge ①
    - Conrod big end side clearance ⓑ
      Use a Thickness Gauge.

If any of the above measurements exceed tolerance, crankshaft repair is required. Take the machine to your authorized Yamaha dealer.

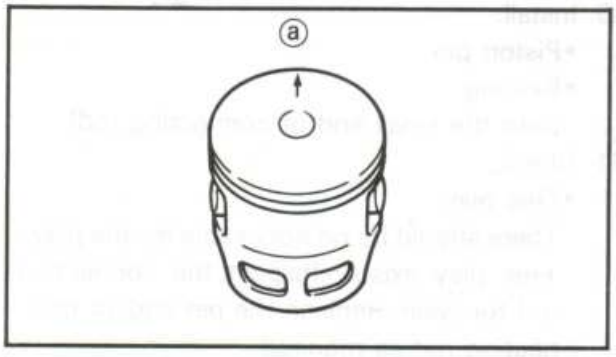
Connecting Rod Axial Play ⓐ:
Normal
0.4 ~ 1.0 mm (0.015 ~ 0.039 in)
<Limit>
<2.0 mm (0.078 in)>
Connecting Rod/Crank Side Clearance ⓑ:
0.25 ~ 0.75 mm (0.01 ~ 0.03 in)



INSTALLATION

Piston and Piston Ring

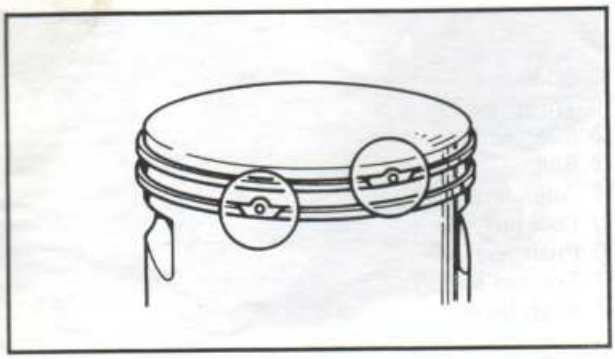
1. Lubricate:
    - Piston pin ①/Bearing ②
2. Install:
    - Bearing/Piston pin/Piston pin clip
    - Piston/Piston pin clip
    - Piston rings



NOTE:

The arrow on piston dome ⓐ must face forward.

3. Lubricate:
    - Piston wall
    - Piston rings



Cylinder

1. Install:
   - Dowel pins
   - Cylinder gasket (New)

CAUTION:

Make sure the ends of the pistón ring are correctly postioned.

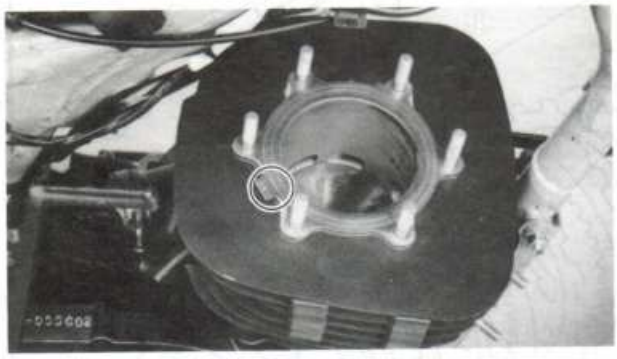


2. Install:
   - Cylinder

NOTE:

Install the cylinder with one hand while compressing the piston rings with the other hand.

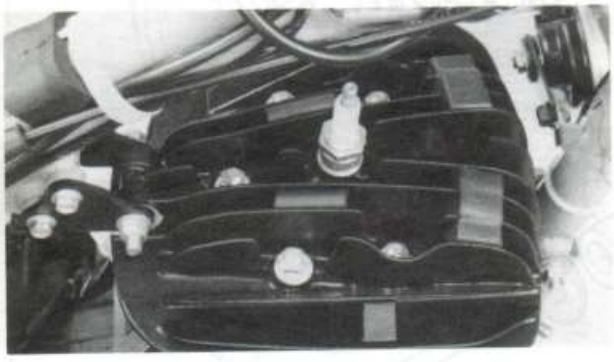
Cylinder:
35 Nm (3.5 m•kg, 25 ft•lb)



Cylinder Head

1. Install:
   - Cylinder head gasket (New)
   - Cylinder head

Cylinder Head:
22 Nm (2.2 m•kg, 16 ft•lb)



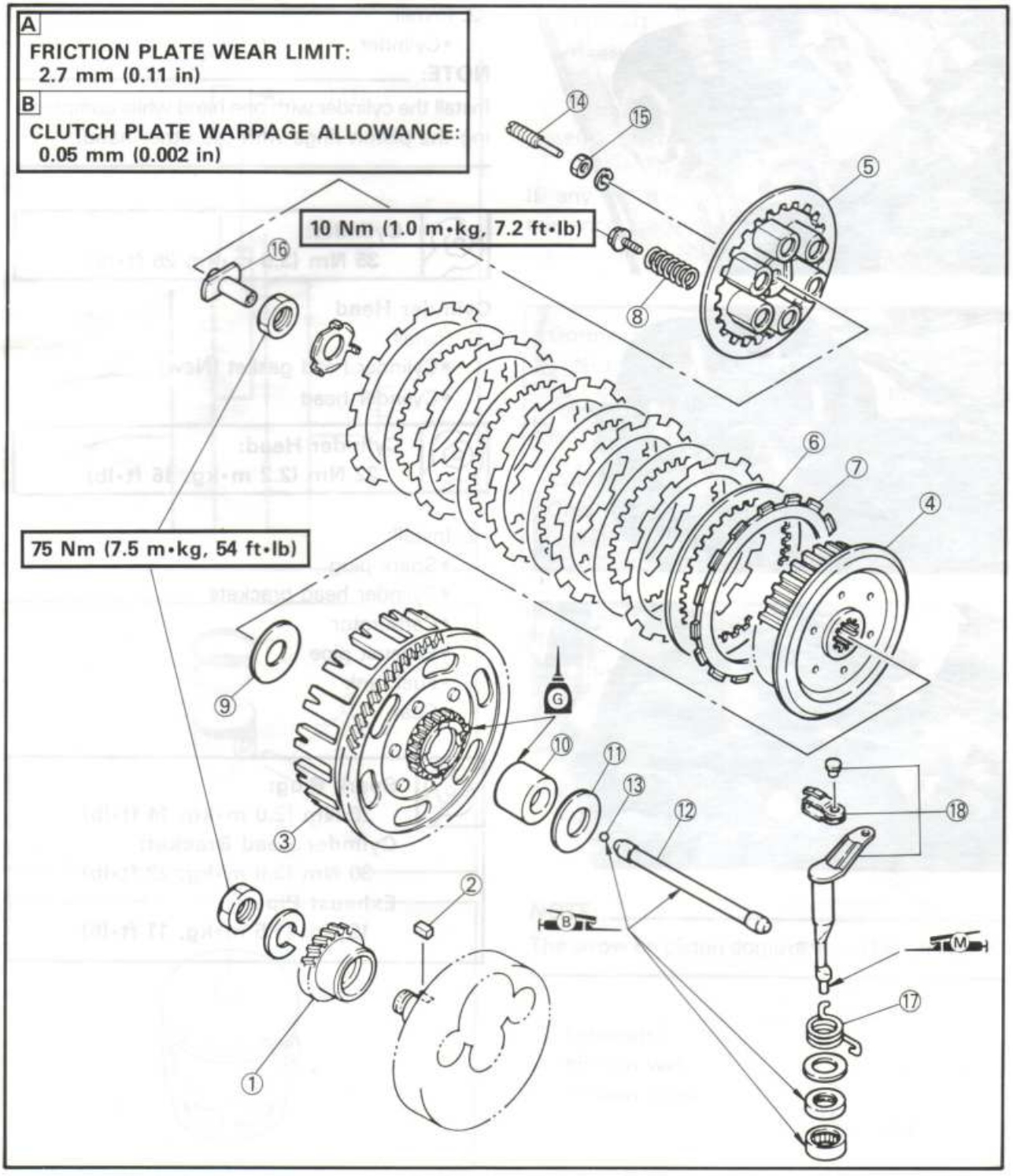
2. Install:
   - Spark plug
   - Cylinder head brackets
   - Carburetor
   - Exhaust pipe
   - Fuel tank
   - Seat

Spark Plug:
20 Nm (2.0 m•kg, 14 ft•lb)
Cylinder Head Bracket:
30 Nm (3.0 m•kg, 22 ft•lb)
Exhaust Pipe:
15 Nm (1.5 m•kg, 11 ft•lb)

3

CLUTCH/PRIMARY DRIVE GEAR

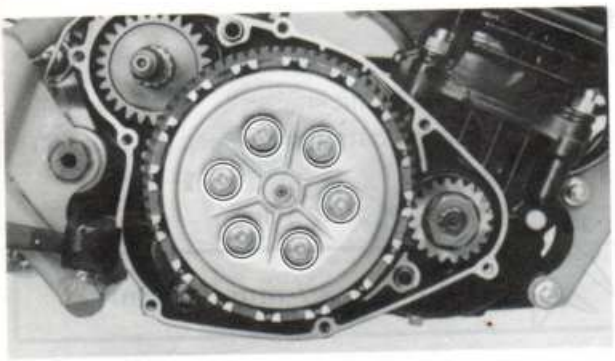
① Primary drive gear
② Key
③ Clutch housing
④ Clutch boss
⑤ Clutch pressure plate
⑥ Clutch plate
⑦ Friction plate
⑧ Clutch spring
⑨ Thrust plate
⑩ Spacer
⑪ Thrust plate
⑫ Push rod 2
⑬ Ball
⑭ Adjuster
⑮ Locknut
⑯ Push rod 1
⑰ Torsion spring
⑱ Push lever





REMOVAL

1. Remove:
   - Engine guard
   - Kick crank
2. Drain:
   - Transmission oil
3. Remove:
   - Crankcase cover

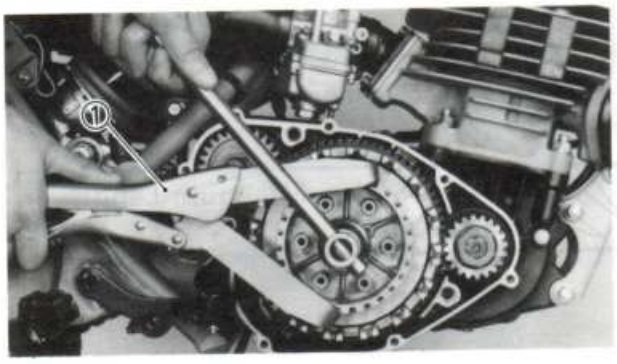


4. Remove:
   - Clutch spring bolts

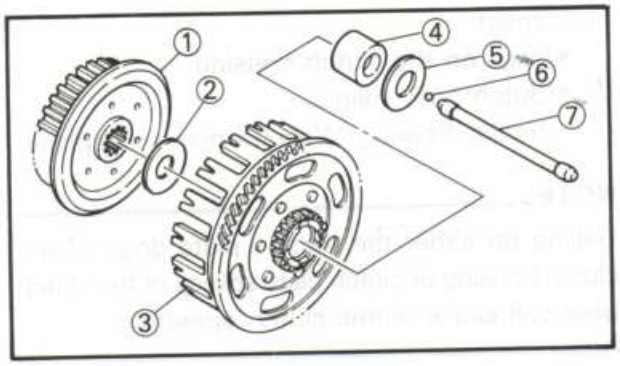
NOTE:

When removing phillips spring screws, loosen each screw in several stages working in a crisscross pattern.

   - Clutch springs
   - Pressure plate
   - Friction plate
   - Clutch plate



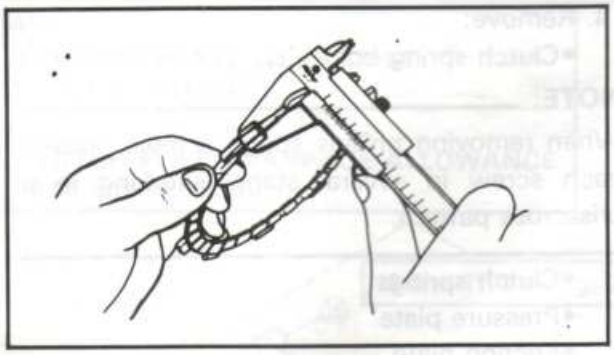
5. Straighten:
   - Lock washer tab
6. Remove:
   - Locknut
     Use Clutch Holding Tool (YM-91042) ①.
   - Lock washer



7. Remove:
   - Clutch boss ①
   - Thrust washer ②
   - Clutch housing ③
   - Spacer ④
   - Thrust washer ⑤
   - Ball ⑥
   - Push rod ⑦



8. Remove:
   - Clutch push lever assembly ①



INSPECTION

1. Measure:
   - Friction plate thickness

   Out of specification → Replace friction plate as a set.

   Measure at all four point.

Wear Limit: 2.7 mm (0.11 in)

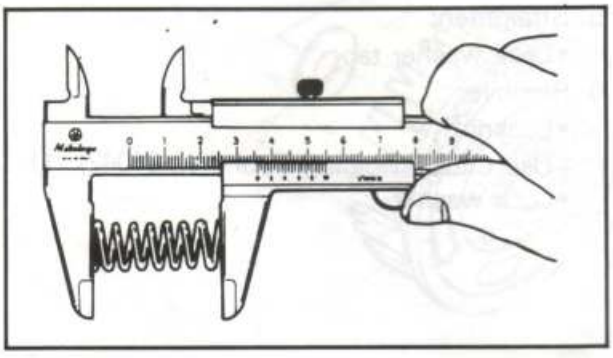


2. Measure:
   - Clutch plate warpage

   Out of specification → Replace clutch plate as a set.

   Use a surface plate and feeler gauge.

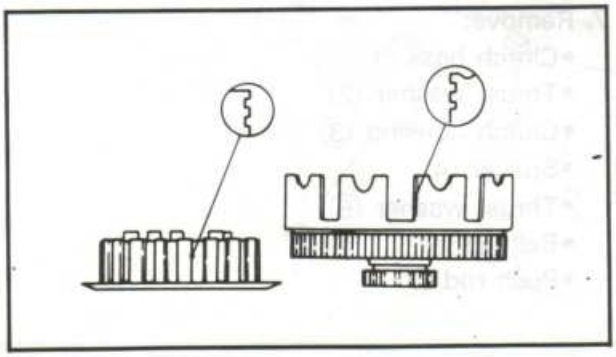
Warp Limit: 0.05 mm (0.002 in)



3. Measure:
   - Clutch spring free length

   Out of specification → Replace springs as a set.

Clutch Spring Minimum Length: 29.9 mm (1.18 in)

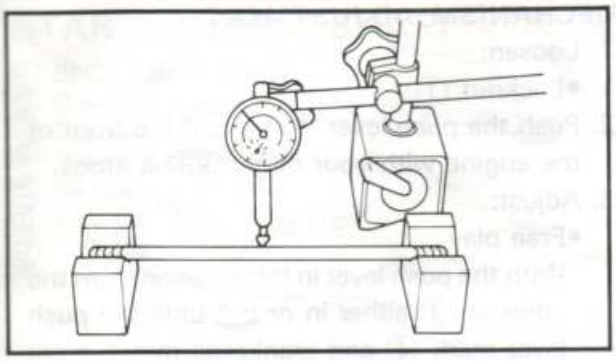


4. Inspect:
   - Dogs on the clutch housing
   - Clutch boss splines

   Cracks/Scoring/Wear/Damage → Replace.

NOTE:

Galling on either the friction plate dogs of the clutch housing or clutch plate splines of the clutch boss will cause erratic clutch operation.



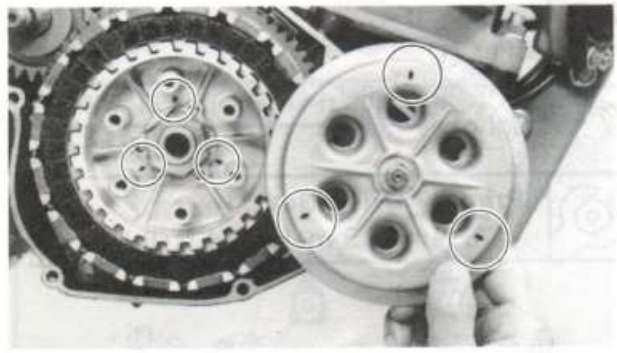
5. Measure:
   - Push rod runout (long rod)
     Out of specification → Replace.
     Use V-Blocs and Dial Gauge.

Bending Limit: 0.2 mm (0.008 in)



6. Inspect:
   - Clutch push lever
     Wear → Repair using 300 ~ 400 grit sandpaper or replace.





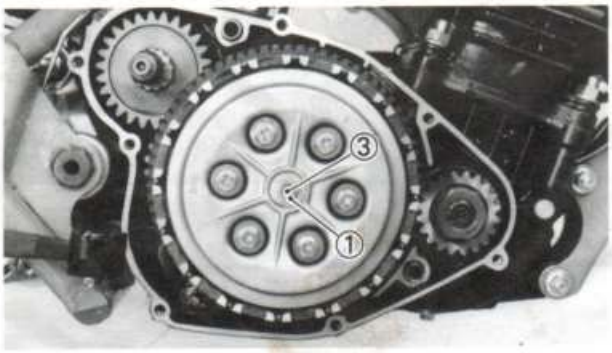
INSTALLATION

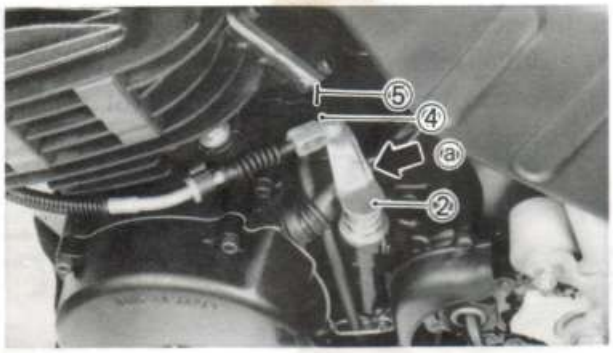
1. Install:
   - Clutch components
     Reverse removal steps.

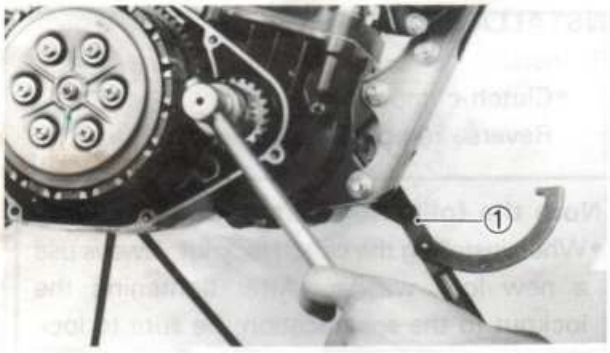
Note the following installation points:
- When installing the clutch locknut, always use a new lock washer. After tightening the locknut to the specification, be sure to lock it with the lock washer.

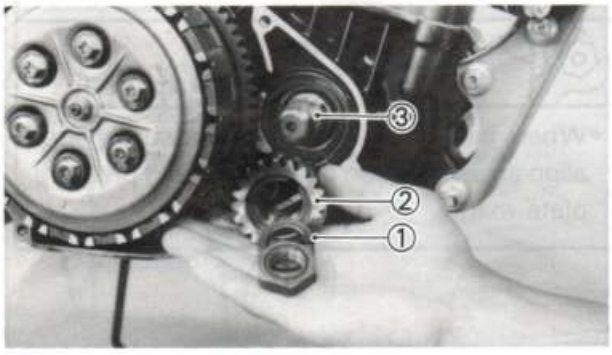
Clutch Locknut:
75 Nm (7.5 m•kg, 54 ft•lb)

- When installing the clutch pressure plate, align arrow mark on clutch boss and pressure plate mark.









MECHANISM ADJUSTMENT

1. Loosen:
   - Locknut ①
2. Push the push lever ② toward the front of the engine with your finger until it stops.
3. Adjust:
   - Free play

   With the push lever in this position, turn the adjuster ③ either in or out until the push lever mark ④ and crankcase match mark ⑤ are aligned.

ⓐ Push

4. Tighten:
   - Locknut ①

10 Nm (1.0 m•kg, 7.2 ft•lb)

PRIMARY DRIVE GEAR REMOVAL

1. Remove:
   - Primary drive gear nut

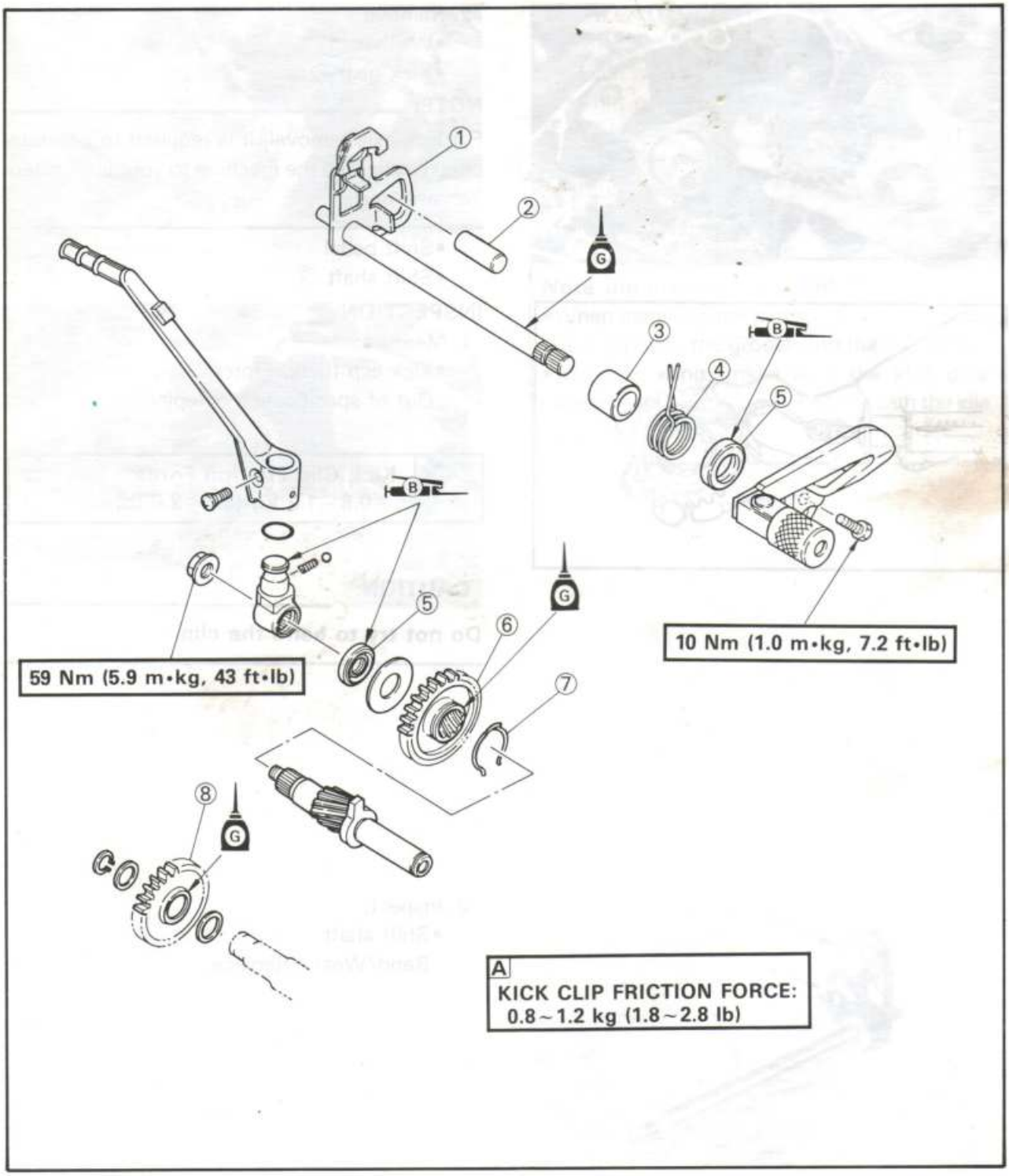
   Use Rotor Holding Tool (YU-01235) ① to lcok the crankshaft.

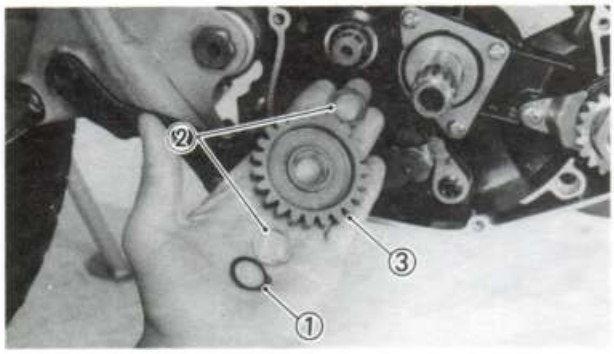
2. Remove:
   - Washer ①
   - Primary drive gear ②
   - Straight key ③

Primary Drive Gear:
75 Nm (7.5 m•kg, 54 ft•lb)

STARTER/SHIFT SHAFT

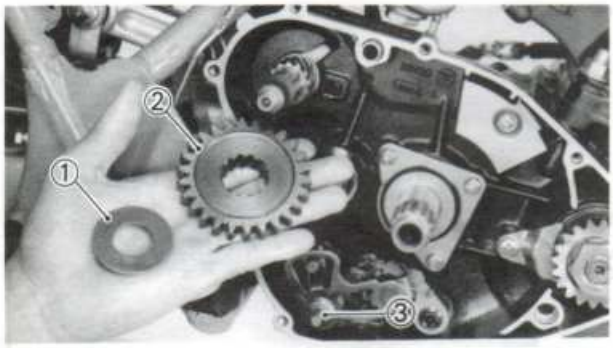
① Shift shaft assembly
② Dowel pin
③ Spacer
④ Return spring
⑤ Oil seal
⑥ Kick gear
⑦ Kick clip
⑧ Kick idle gear





REMOVAL

1. Remove:
   - Clutch assembly
   - Circlip ①
   - Washer ②
   - Kick idle gear ③

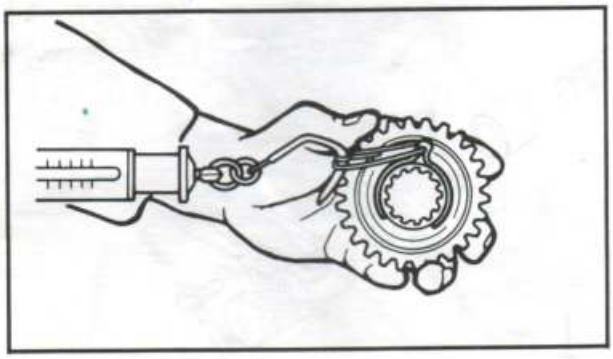


2. Remove:
   - Washer ①
   - Kick gear ②

NOTE:

For kick axle removal, it is required to separate crankcase. Take the machine to your authorized Yamaha dealer.

   - Shift pedal
   - Shift shaft ③



INSPECTION

1. Measure:
   - Kick clip friction force
     Out of specification → Replace.

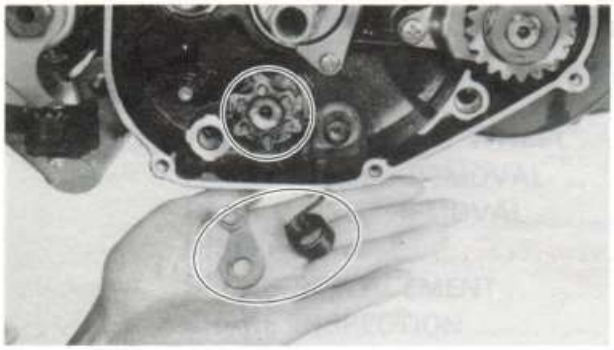
Kick Clip Friction Force:
0.8 ~ 1.2 kg (1.8 ~ 2.6 lb)

CAUTION:

Do not try to bend the clip.



2. Inspect:
   - Shift shaft
     Bend/Wear → Replace.



3. Inspect:
   - Segment
   - Stopper lever

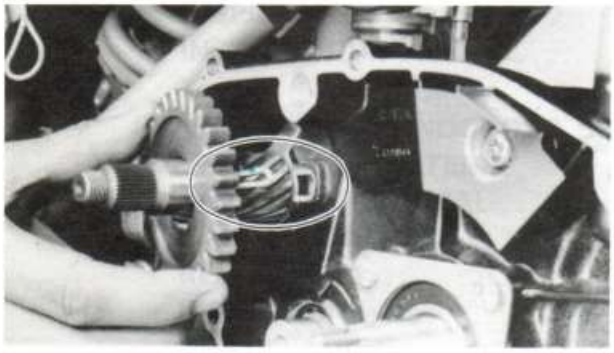
   Wear/Damage → Replace.



INSTALLATION

1. Install:
   - Shift shaft
   - Shift pedal
   - Kick gear
   - Kick idle gear
   - Clutch assembly

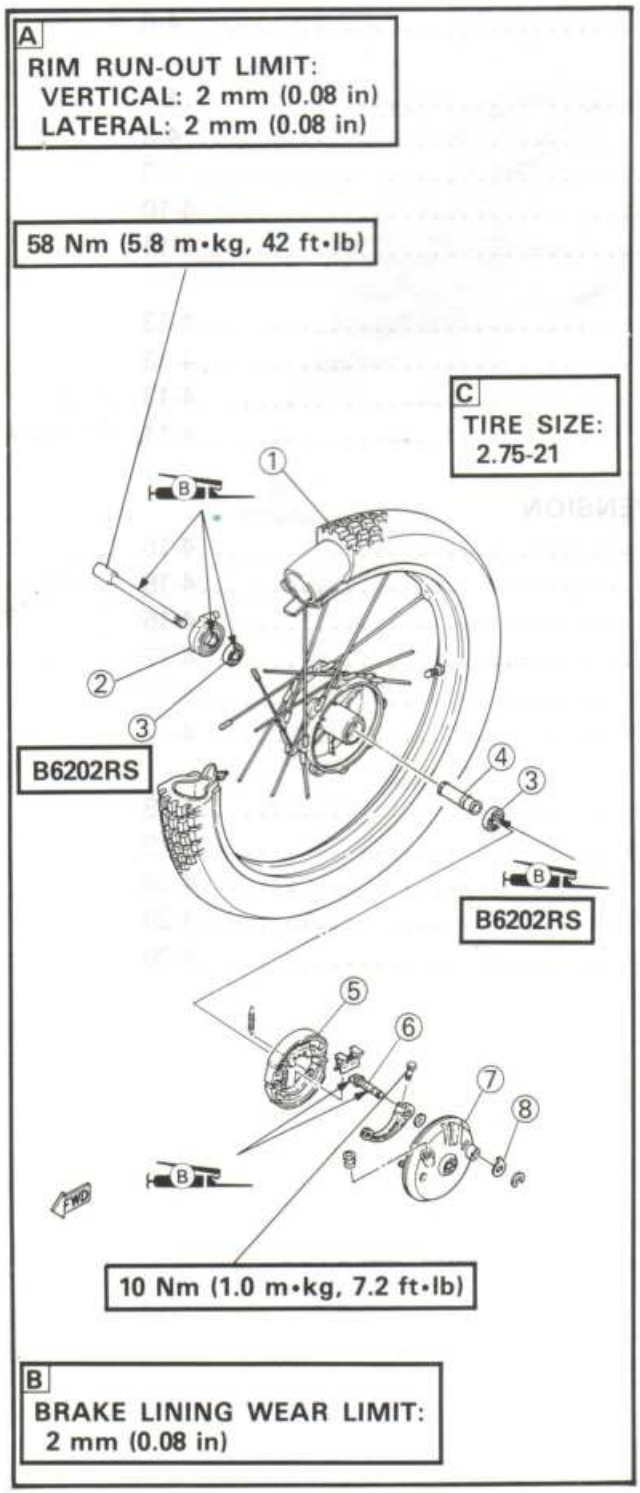
Reverse removal steps.

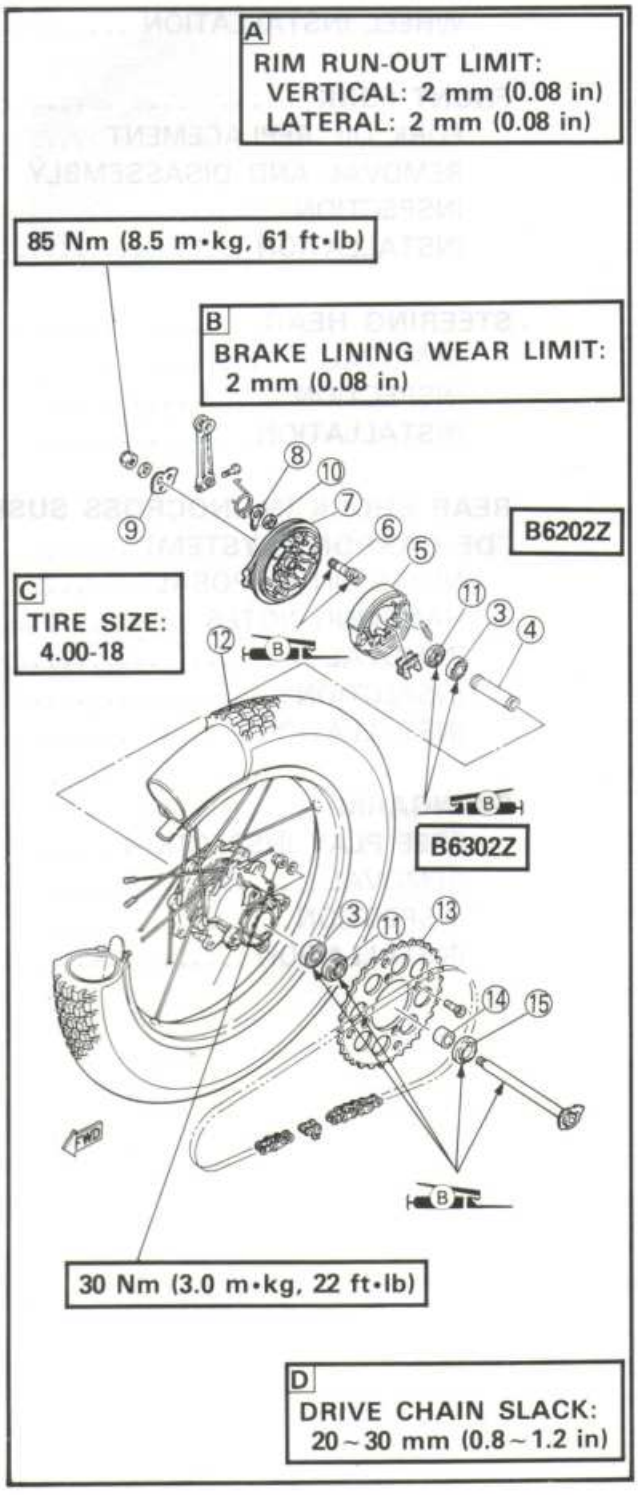


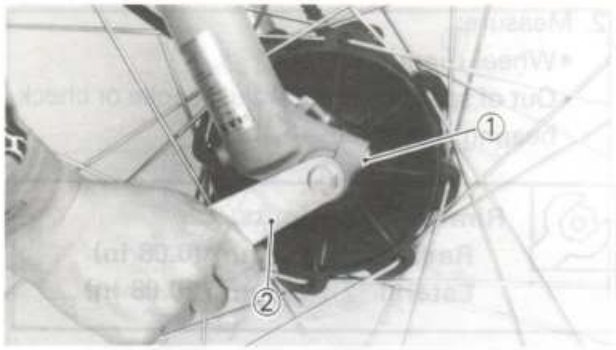
Note the installation/points:
- When installing the kick gear, align the kick gear clip with the groove into the crankcase.
- After installing, make sure the kick gear engages and disengages properly with the idle gear.

FRONT WHEEL/REAR WHEEL

① Front wheel
② Speedometer gear unit
③ Bearing
④ Spacer
⑤ Brake shoe
⑥ Camshaft
⑦ Brake shoe plate
⑧ Wear indicator
⑨ Chain puller
⑩ Felt
⑪ Oil seal
⑫ Rear wheel
⑬ Driven sprocket
⑭ Collar
⑮ Dust cover









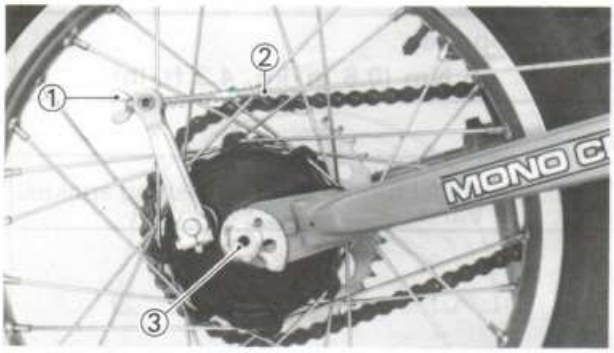
FRONT WHEEL REMOVAL

1. Elevate the front wheel by placing a suitable stand under the engine.
2. Loosen:
   - Axle pinch bolt ①
3. Remove:
   - Axle shaft

NOTE:

When removing, use the special wrench ② which is included in the owner's tool kit.

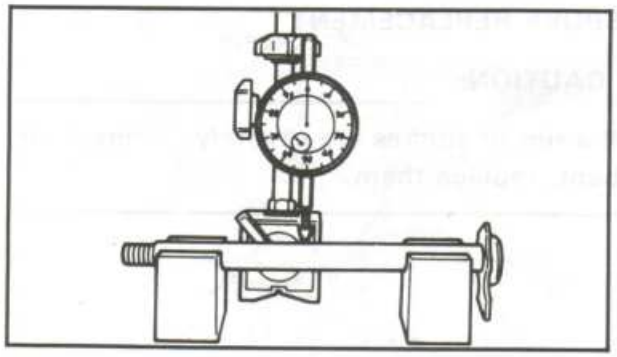
4. Remove:
   - Speedometer gear unit
   - Brake shoe plate ①





REAR WHEEL REMOVAL

1. Elevate the rear wheel by placing a suitable stand under the engine.
2. Remove:
   - Adjuster ①
   - Brake cable ②
   - Axle nut
   - Axle shaft ③
3. Unhook:
   - Drive chain
     (from the sprocket)
4. Remove:
   - Rear wheel



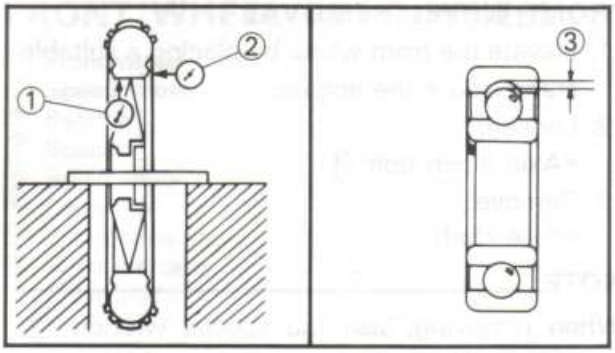
INSPECTION

1. Inspect:
   - Axle shaft
     Bends→Replace.

Bend Limit:
0.25 mm (0.01 in)

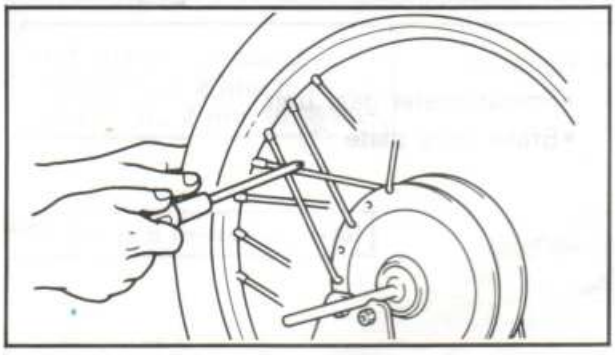
WARNING:

Do not attempt to straighten a bent axle.



2. Measure:
   • Wheel runout
   Out of specification → Adjust spoke or check bearing play ③.

Rim Runout Limits:
Radial ①: 2.0 mm (0.08 in)
Lateral ②: 2.0 mm (0.08 in)



3. Check:
   • Spokes
   Turn the wheel and tap the spokes with a screwdriver.

NOTE:

A tight spoke will emit a clear, ringing tone; a loose spoke will sound flat.

Loose → Tighten.

Spoke:
6 Nm (0.6 m•kg, 4.3 ft•lb)

NOTE:

Check the wheel runout after tightening spokes.



4. Inspect:
   • Wheel bearings
   Wheel hub play/wheel turns roughly → Replace.

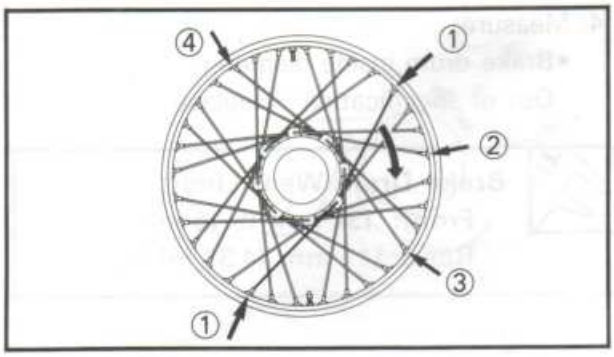
NOTE:

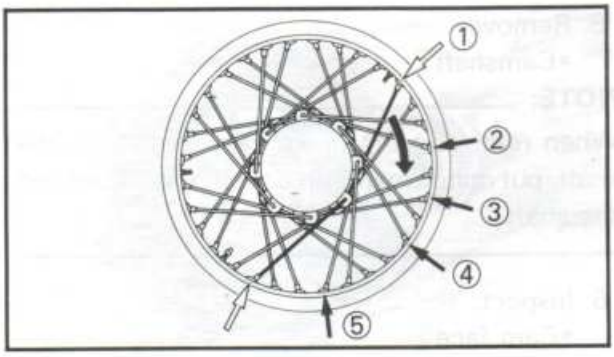
If bearings need replacement, take the wheels to your Yamaha dealer for this service.

SPOKE REPLACEMENT

CAUTION:

If a rim or spokes are severely "dinged" or bent, replace them.





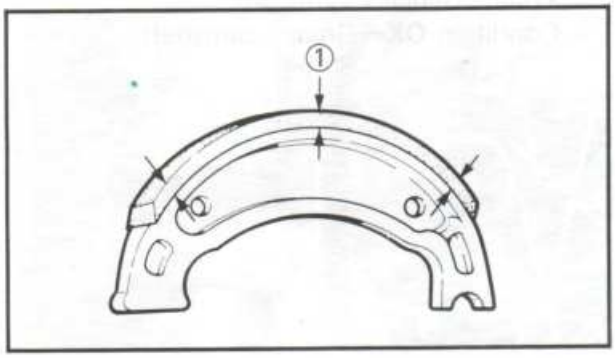
Spoke replacement steps:

[Front]

1. When replacing the spoke ①, remove the nipples ①, ②, ③ and ④.
2. Turn the spoke ① up to ③. Then pull the spoke out.
3. Install and fit a new spoke.

[Rear]

1. When replacing the spoke ①, remove the nipples ① ② ③ ④ and ⑤.
2. Turn the spoke ① up to ④. Then pull the spoke out.
3. Install and fit a new spoke.

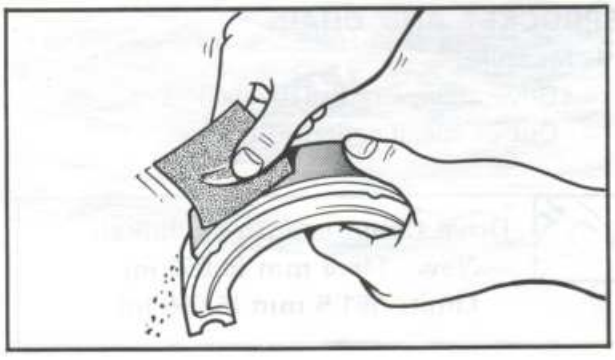


BRAKE INSPECTION

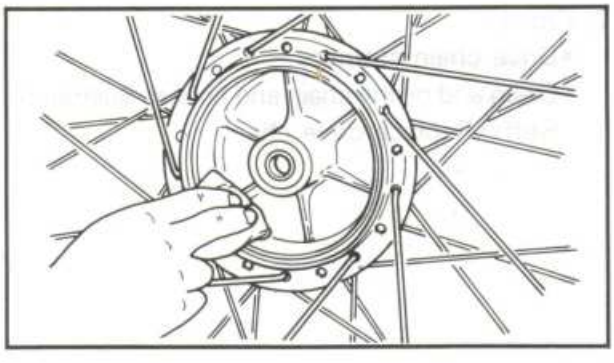
1. Measure:
   - Brake shoes (Thickness)
     Out of specification→Replace.

① Measuring point

Brake Shoe Thickness:
4 mm (0.16 in)
Replacement Limit:
2 mm (0.08 in)



2. Inspect:
   - Brake shoes
     Glazed parts→Sand with coarse sandpaper.



3. Inspect:
   - Brake drum (Inner surface)
     Oil→Wipe off brake drum with rag soaked in lacquer thinner or solvent.
     Scratches→Polish brake drum lightly and evenly with emery cloth.



4. Measure:
   • Brake drum inside diameter
   Out of specification → Replace.

Brake Drum Wear Limit:
Front: 131 mm (5.16 in)
Rear: 111 mm (4.37 in)

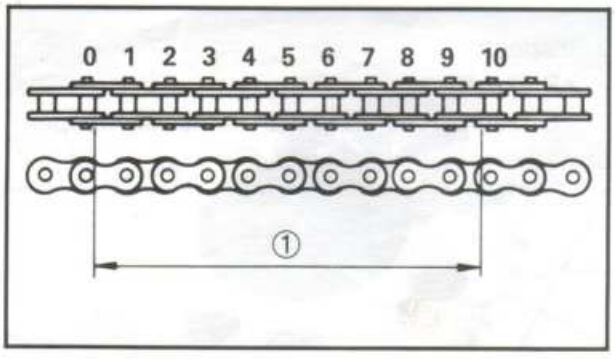


5. Remove:
   • Camshaft

NOTE:

When removing the brake cam lever from the shaft, put match marks on both the cam lever and the shaft.

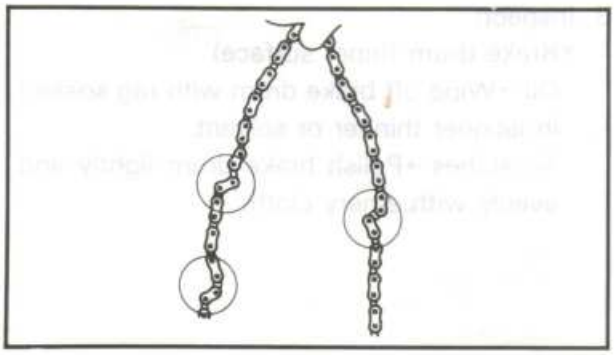
6. Inspect:
   • Cam face
   Wear → Replace camshaft.
   Condition OK → Grease camshaft.



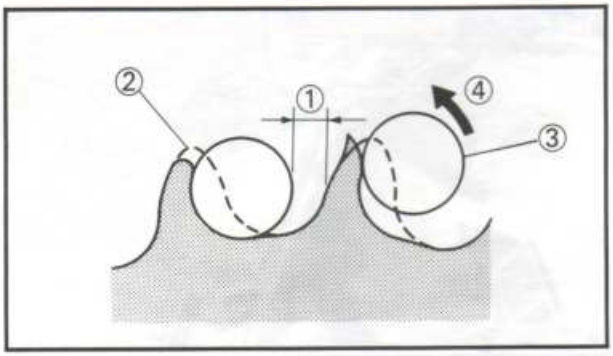
SPROCKET AND CHAIN

1. Measure:
   • Drive chain length (10 links) ①
   Out of specification → Replace.

Drive Chain Length (10 links):
New: 148.6 mm (5.850 in)
Limit: 151.5 mm (5.965 in)

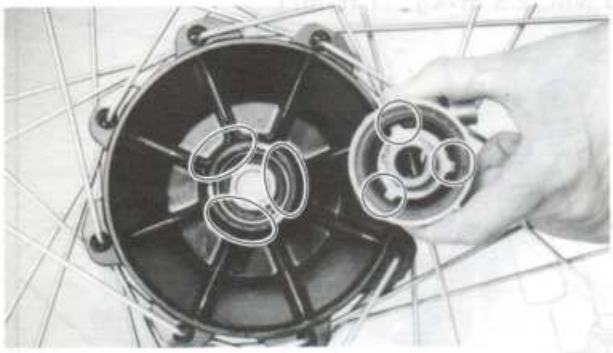


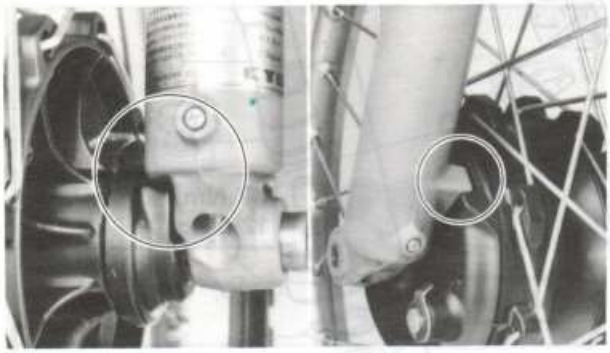
2. Check:
   • Drive chain stiffness
   Clean and oil the chain and hold as illustrated
   Stiff → Replace drive chain.

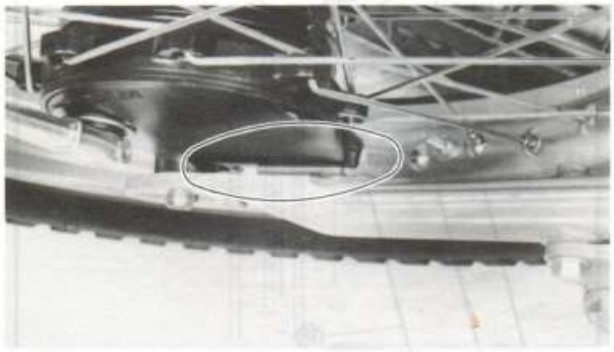


3. Inspect:
   - Drive sprocket/Driven sprocket
     More than 1/4 teeth ① wear→Replace sprocket.
     Bent teeth →Replace sprocket.

② Correct
③ Roller
④ Slip off







WHEEL INSTALLATION

When installing wheels, reverse the removal procedure taking care of the following points.

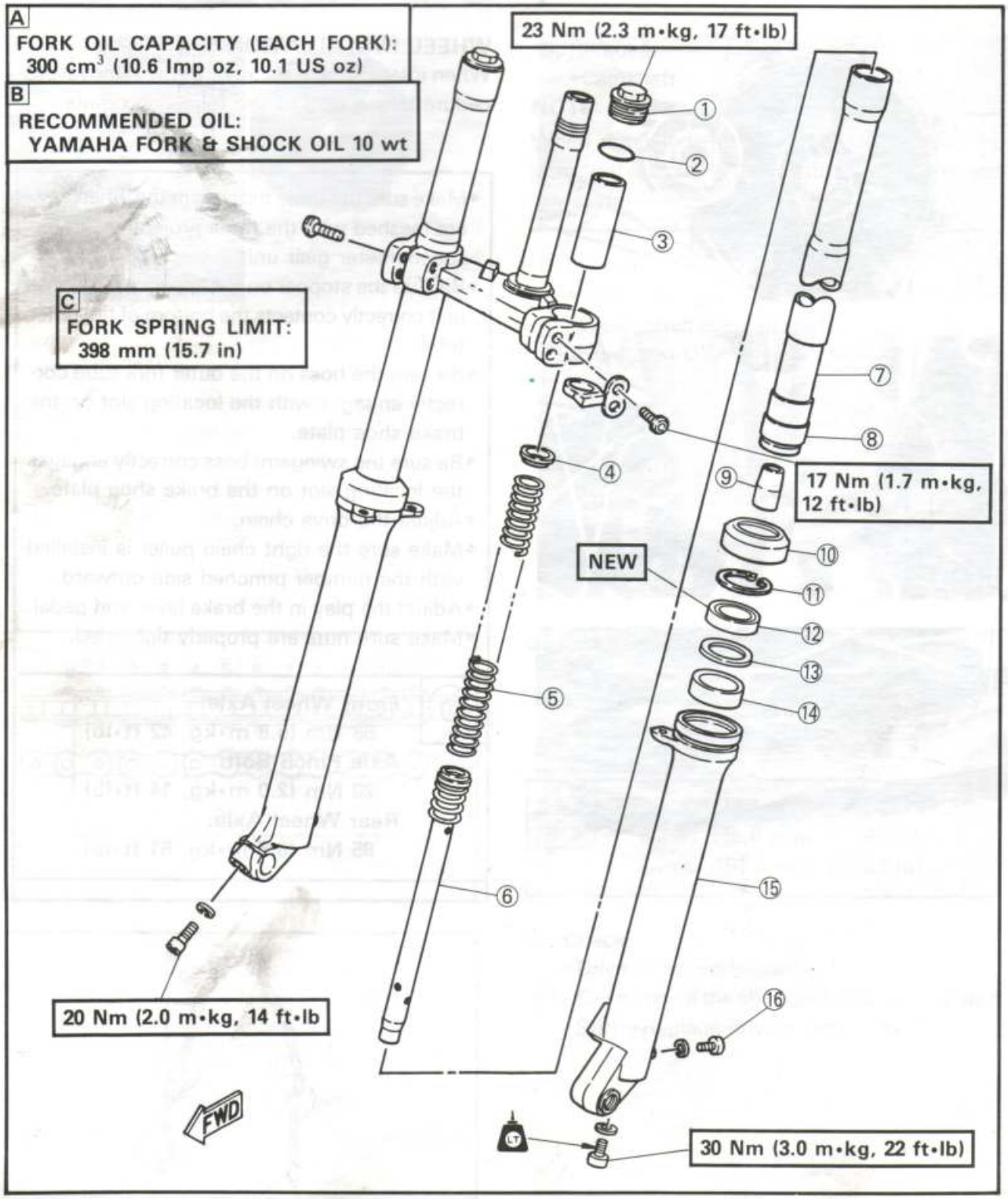
- Make sure the three notches in the wheel hub are meshed with the three projections in the speedometer gear unit.
- Be sure the stopper on the speedometer gear unit correctly contacts the bottom of the outer tube.
- Be sure the boss on the outer fork tube correctly engages with the locating slot on the brake shoe plate.
- Be sure the swingarm boss correctly engages the locating slot on the brake shoe plate.
- Adjust the drive chain.
- Make sure the right chain puller is installed with the number punched side outward.
- Adjust the play in the brake lever and pedal.
- Make sure nuts are properly tightened.

Front Wheel Axle:
58 Nm (5.8 m•kg, 42 ft•lb)
Axle Pinch Bolt:
20 Nm (2.0 m•kg, 14 ft•lb)
Rear Wheel Axle:
85 Nm (8.5 m•kg, 61 ft•lb)

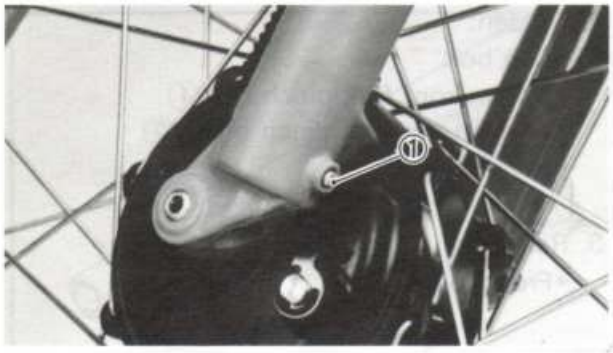
4

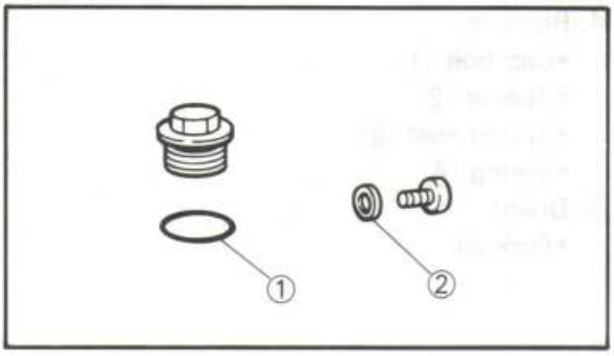
FRONT FORK

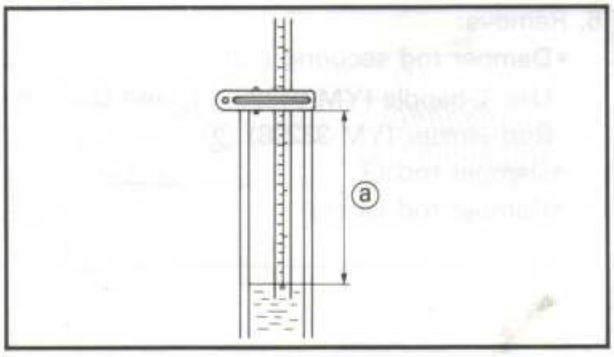
① Cap bolt
② O-ring
③ Spacer
④ Spring seat
⑤ Fork spring
⑥ Damper rod
⑦ Inner tube
⑧ Slide metal
⑨ Oil lock piece
⑩ Dust seal
⑪ Circlip
⑫ Oil seal
⑬ Oil seal washer
⑭ Guide bushing
⑮ Outer tube
⑯ Drain screw











FORK OIL REPLACEMENT

1. Loosen:
   - Front fork upper pinch bolt ①

2. Remove:
   - Cap bolt ②
   - Spacer
   - Spring seat
   - Spring
3. Place receptacle under drain hole.

4. Remove:
   - Drain screw ①

   After most of the oil has drained, slowly pump the forks up and down to remove any remaining oil.

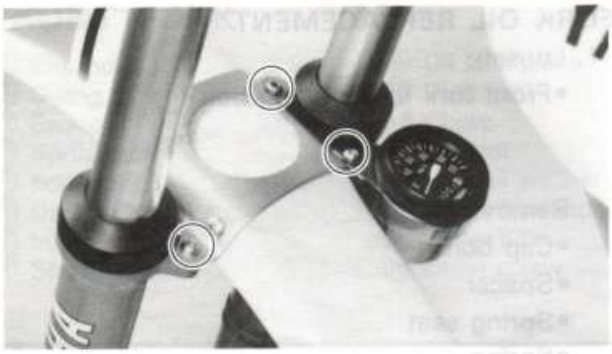
5. Inspect:
   - Cap bolt O-ring ①
   - Drain screw gasket ②

   Wear/Damage → Replace.
6. Install:
   - Drain screw
7. Fill:
   - Front fork

Recommended Oil:
Yamaha Fork & Shock Oil 10wt
Front Fork Oil Capacity (each fork):
300 cm³ (10.6 Imp oz, 10.1 US oz)
Oil Level (from top of inner tube fully compressed without spring) ⓐ:
99 mm (3.90 in)

8. Install:
   - Spring/Spring seat/Spacer/Cap bolt
9. Tighten:
   - Cap bolt
   - Pinch bolt

Cap Bolt:
23 Nm (2.3 m•kg, 17 ft•lb)
Pinch Bolt (Front fork):
23 Nm (2.3 m•kg, 17 ft•lb)



REMOVAL AND DISASSEMBLY

WARNING:

Securely support the machine so it won't fall over when the front wheel and front forks are removed.

1. Remove:
   - Front wheel
   - Fork brace

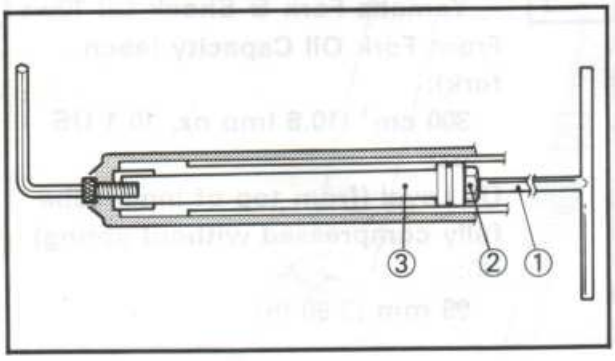


2. Loosen:
   - Cap bolt
   - Upper front fork pinch bolt ①
   - Lower front fork pinch bolts ②
   - Headlight ③

3. Remove:
   - Front fork



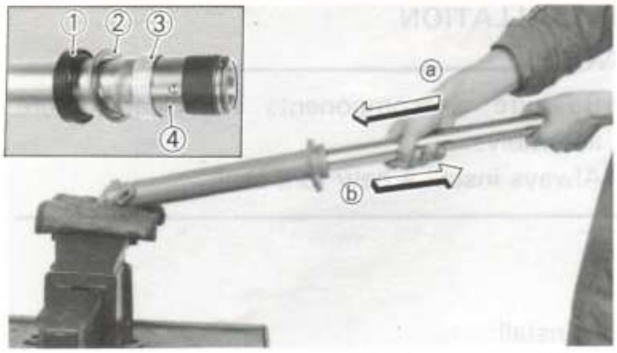
4. Remove:
   - Cap bolt ①
   - Spacer ②
   - Spring seat ③
   - Spring ④
5. Drain:
   - Fork oil



6. Remove:
   - Damper rod securing bolt
     Use T-handle (YM-01326) ① and Damper Rod Holder (YM-33298) ②.
   - Damper rod ③
   - Damper rod spring

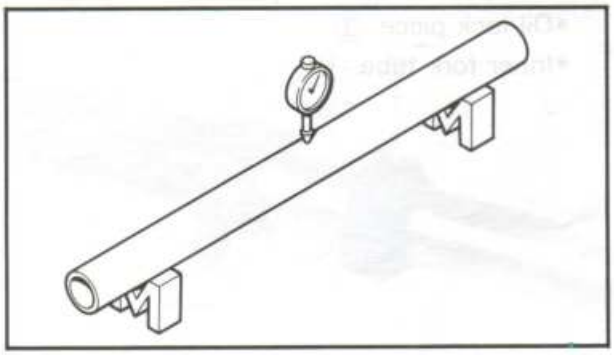


7. Remove:
   - Dust seal ①
   - Circlip ②



8. Remove:
   - Oil seal ①
   - Oil seal washer ②
   - Guide bushing ③
   - Inner tube ④
   - Oil lock piece

ⓐ Put in slowly
ⓑ Pull back quickly

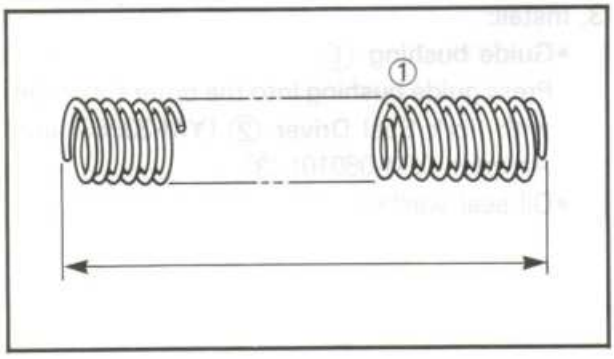


INSPECTION

1. Inspect:
   - Inner fork tube/outer fork tube
     Severe scratches/Bends→Replace.
     Damaged oil lock valve→Replace.

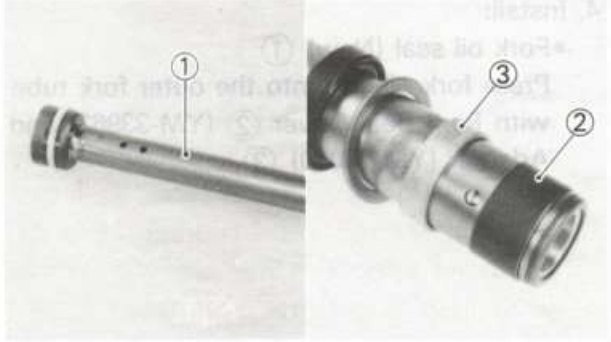
WARNING:

Do not attempt to straighten a bent fork tube as this may dangerously weaken the tube.



2. Inspect:
   - Fork spring ①
     Over specified limit→Replace.

Fork Spring Free Length Limit:
398 mm (15.7 in)

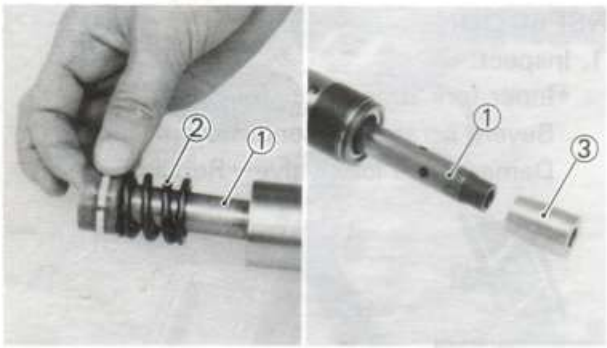


3. Inspect:
   - Damper rod ①
     Worn damper rod seal→Replace.
     Contamination→Wash and blow out all passages.
   - Slide metal ②/Guide bushing ③
     Damage/Wear→Replace.

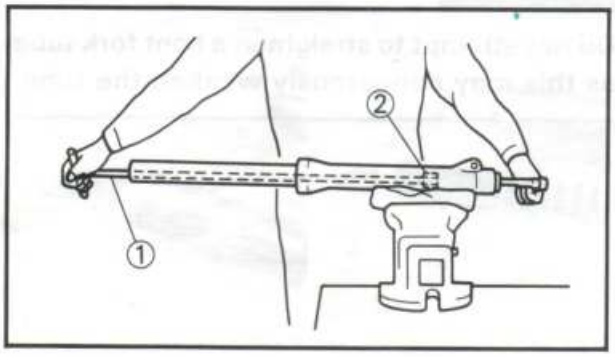
INSTALLATION

NOTE:

- Be sure all components are clean before assembly.
- Always install a new fork seal.



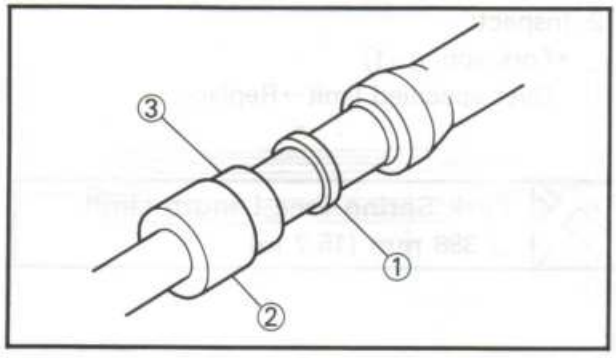
1. Install:
   - Damper rod ① / Damper rod spring ②
   - Oil lock piece ③
   - Inner fork tube



2. Install:
   - Damper rod securing bolt

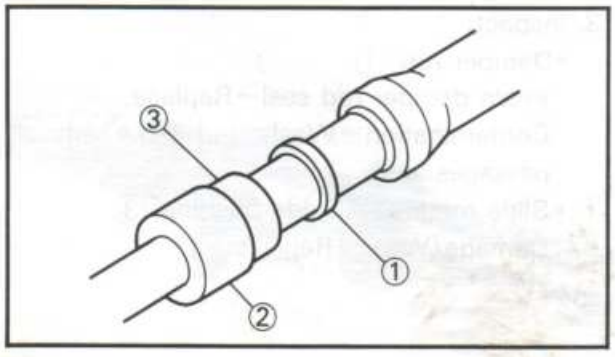
   Hold damper rod with Damper Rod Holder ② (YM-33962) and T-handle ① (YM-01326).

	30 Nm (3.0 m•kg, 22 ft•lb) **LOCTITE®**



3. Install:
   - Guide bushing ①

   Press guide bushing into the outer fork tube with Fork Seal Driver ② (YM-33963) and Adapter (YM-08010) ③.
   - Oil seal washer

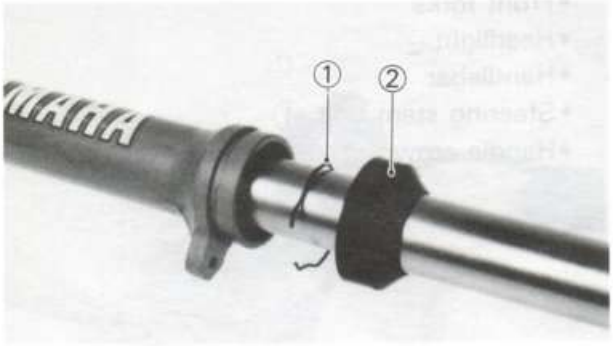


4. Install:
   - Fork oil seal (New) ①

   Press fork oil seal into the outer fork tube with Fork Seal Driver ② (YM-33963) and Adapter (YM-08010) ③.

CAUTION:

Be sure oil seal numbered side face upward.



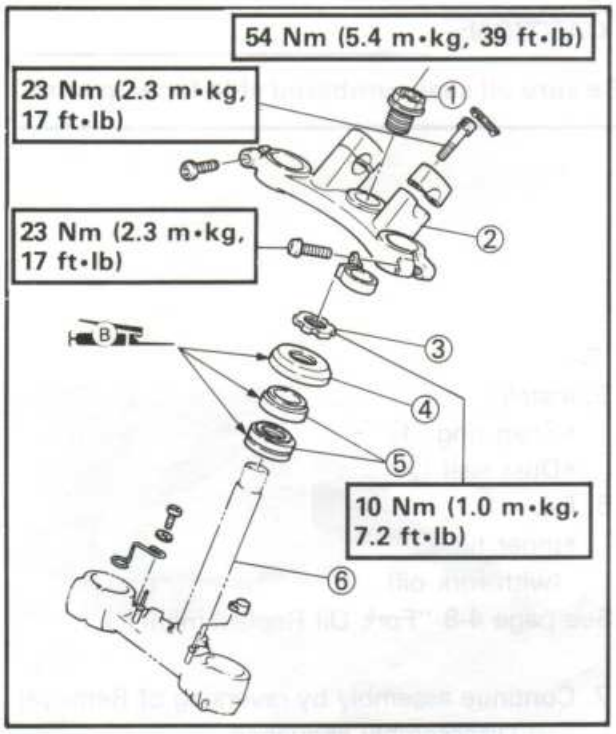
5. Install:
   - Snap ring ①
   - Dust seal ②
6. Fill:
   - Inner tube
     (with fork oil)

(See page 4-8 "Fork Oil Replacement.")

7. Continue assembly by reversing of Removal and Disassembly sequence.
   Install and torque tighten each component as specified.

Upper Pinch Bolts:
Cap Bolt:
23 Nm (2.3 m•kg, 17 ft•lb)
Lower Pinch Bolts:
17 Nm (1.7 m•kg, 12 ft•lb)

4



STEERING HEAD

① Steering stem bolt
② Handle crown
③ Ring nut
④ Bearing cover
⑤ Bearing
⑥ Steering stem

REMOVAL

1. Remove:
   - Front wheel
   - Front forks
   - Headlight
   - Handlebar
   - Steering stem bolt ①
   - Handle crown ②



2. Remove:
   - Ring nut ③

   Use Steering Nut Wrench (YU-01268).

NOTE:

Support the under bracket with one hand so that the ball bearing will not fall down.

- Bearing cover ④
- Bearing ⑤
- Steering stem ⑥

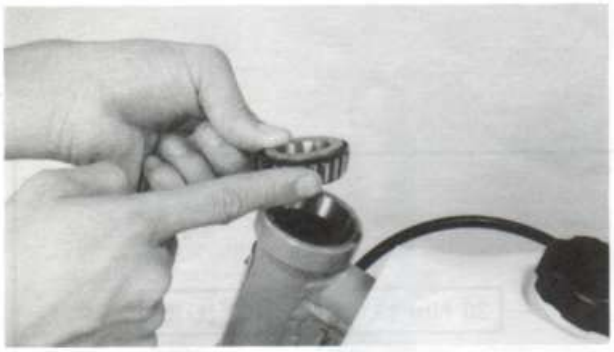


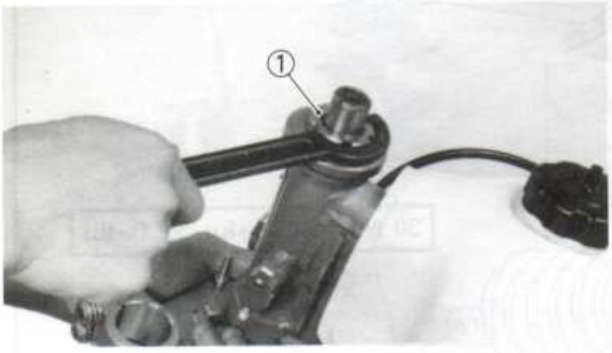
INSPECTION

1. Inspect:
   - Bearing

     Pitting/Damage → Replace races and bearing.

     (Install the bearings in the races. Spin the bearings by hand. If the bearings hang up or are not smooth in their operation in the races, replace bearings and races.)





INSTALLATION

1. Lubricate:
   - •Bearings
   - •Bearing cover seal

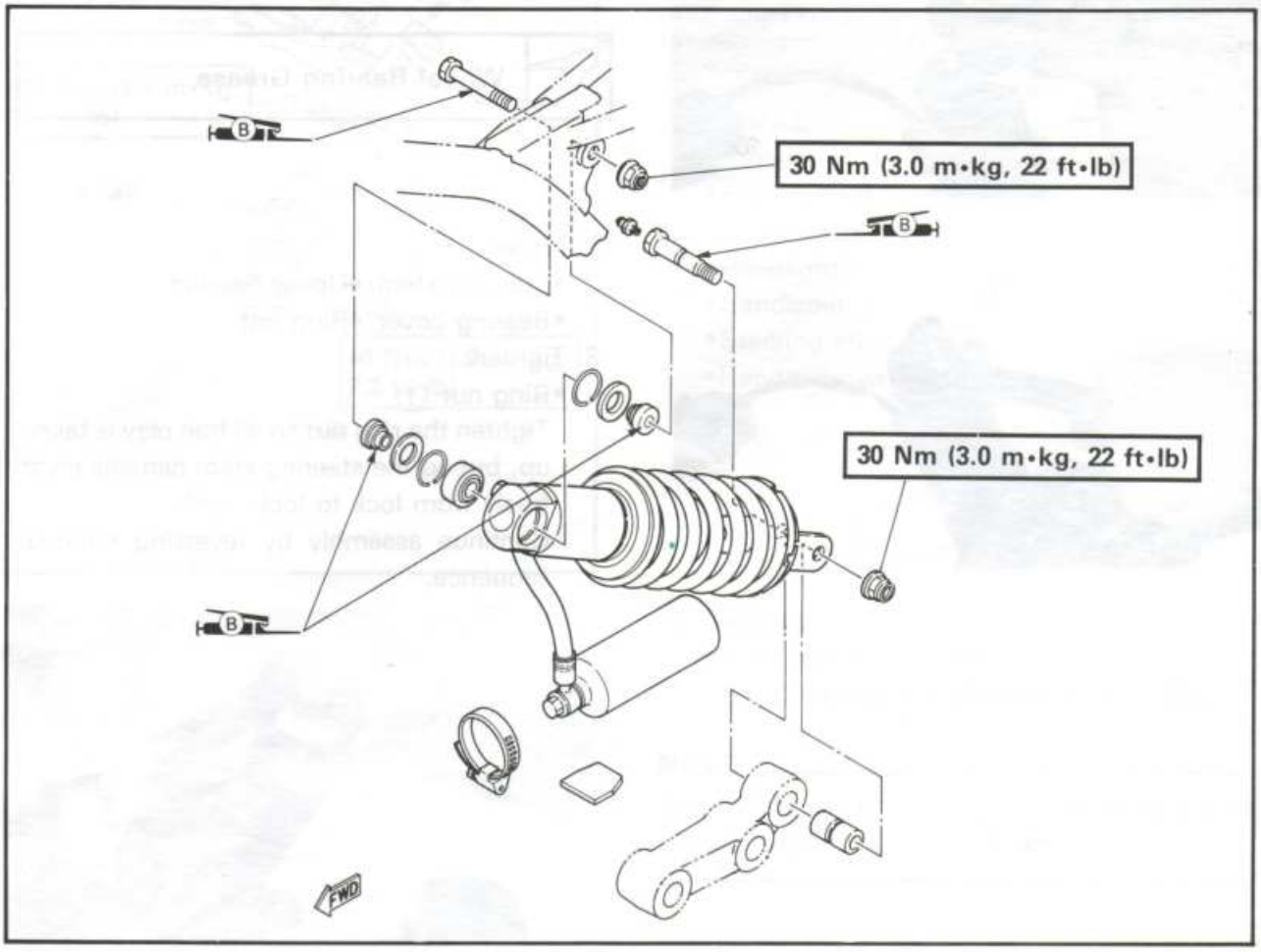
	Wheel Bearing Grease

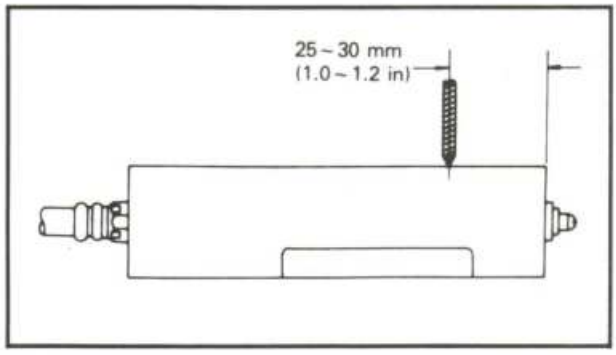
2. Install:
   - •Steering stem/•Upper bearing
   - •Bearing cover/•Ring nut
3. Tighten:
   - •Ring nut ①

   Tighten the ring nut so all free play is taken up, but so the steering stem can still pivot freely from lock to lock.

   Continue assembly by reversing removal sequence.

REAR SHOCK (MONOCROSS SUSPENSION "DE CARBON" SYSTEM)





NOTES ON DISPOSAL (YAMAHA DEALERS ONLY)

Before disposing the shock absorber, be sure to extract the nitrogen gas. To do so, drill a 2 or 3 mm (0.08 ~ 0.12 in) hole through the tank at a position 25 ~ 30 mm (1.0 ~ 1.2 in) from the bottom end of the tank. At this time, wear eye protection to prevent eye damage from escaping gas and/or metal chips.

WARNING:

To dispose of a damaged or worn-out shock absorber, take the unit to your Yamaha dealer for this disposal procedure.



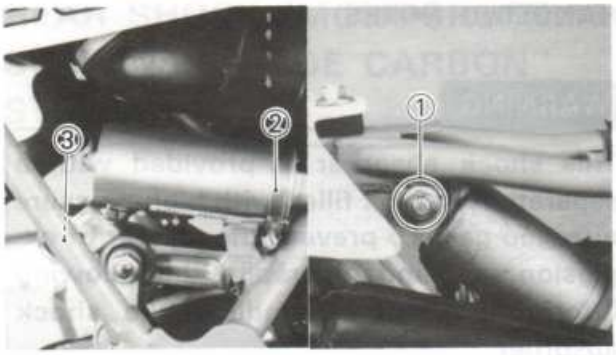
HANDLING NOTES

WARNING:

This shock absorber is provided with a separate type tank filled with high-pressure nitrogen gas. To prevent the danger of explosion, read and understand the following information before handling the shock absorber.
The manufacturer can not be held responsible for property damage or personal injury that may result from improper handling.

1. **Never tamper or attempt to disassemble the cylinder or the tank. Never attempt to remove the banjo bolts where the hose attaches to the monoshock and sub tank; otherwise, oil will spurt from the cylinder due to the high presssure in the nitrogen gas tank.**
2. **Never throw the shock absorber into an open flame or other high heat. The shock absorber may explode as a result of nitrogen gas expansion and/or damage to the hose.**
3. **Be careful not to damage any part of the gas tank. A damaged gas tank will impair the damping performance or cause a malfunction.**
4. **Use care not to damage any part of the hose. Any break in the hose may result in a spurt of oil under high-pressure.**
5. **Take care not to scratch the contact surface of the piston rod with the cylinder; or oil could leak out.**
6. **Never attempt to remove the plug at the bottom of the nitrogen gas tank. It is very dangerous to remove the plug.**
7. **When scrapping the shock absorber, follow the instructions on disposal.**

REAR SHOCK









REMOVAL

1. Remove:
   - Seat
   - Shock absorber upper securing bolt ①
   - Sub tank holding band ②
   - Shock absorber lower securing bolt ③

2. Remove:
   - Shock absorber
     (from the machine)

CAUTION:

Take care to avoid damaging the rubber hose or the shock absorber.

INSPECTION

1. Inspect:
   - Damper rod
     Bent/Damage → Replace as a assembly.
   - Oil seal
     Oil leakage → Replace as a assembly.

INSTALLATION

1. Install:
   - Shock absorber
     Reverse removal procedure taking care of the following points.

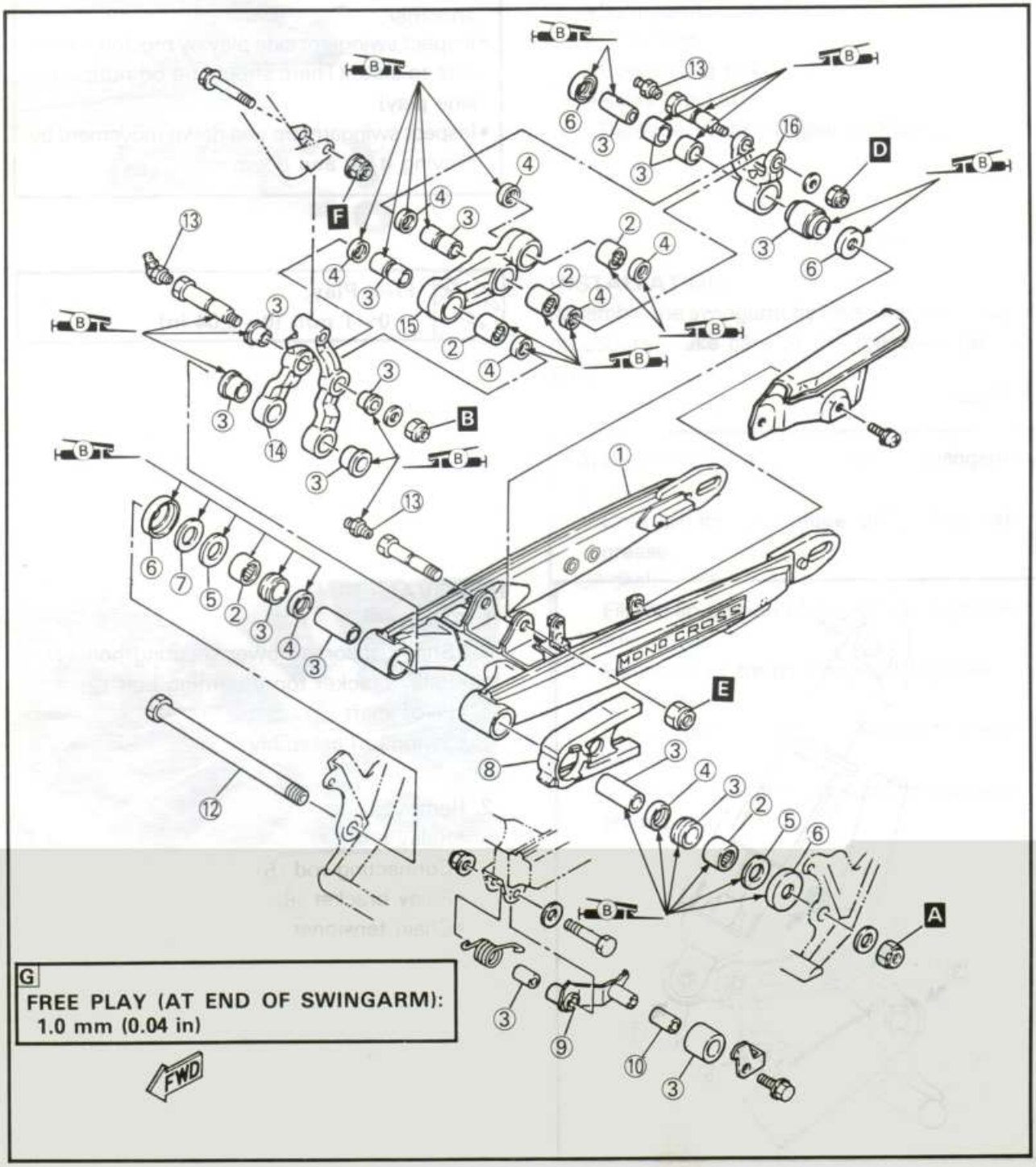
- Apply grease to the top and bottom mounting bolt.
- Torque the bolts to specification.

Shock Absorber:
30 Nm (3.0 m•kg, 22 ft•lb)

SWINGARM

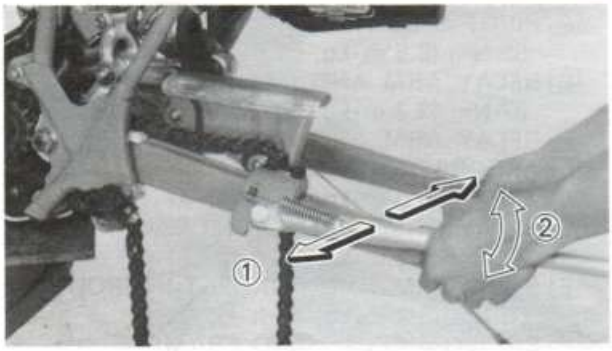
① Swingarm complete
② Bearing
③ Bush
④ Oil seal
⑤ Plain washer
⑥ Thrust cover
⑦ Shim
⑧ Chain protector
⑨ Tensioner arm
⑩ Collar
⑪ Chain tensioner
⑫ Pivot shaft
⑬ Grease nipple
⑭ Relay bracket
⑮ Relay arm
⑯ Connecting rod

A PIVOT SHAFT:
85 Nm (8.5 m•kg, 61 ft•lb)
B RELAY ARM AND BRACKET RELAY:
32 Nm (3.2 m•kg, 23 ft•lb)
C RELAY ARM AND REAR SHOCK ABSORBER:
30 Nm (3.0 m•kg, 22 ft•lb)
D RELAY ARM AND CONNECTING ROD:
32 Nm (3.2 m•kg, 23 ft•lb)
E SWINGARM AND CONNECTING ROD:
58 Nm (5.8 m•kg, 42 ft•lb)
F BRACKET RELAY AND FRAME:
30 Nm (3.0 m•kg, 22 ft•lb)



G
FREE PLAY (AT END OF SWINGARM):
1.0 mm (0.04 in)

4

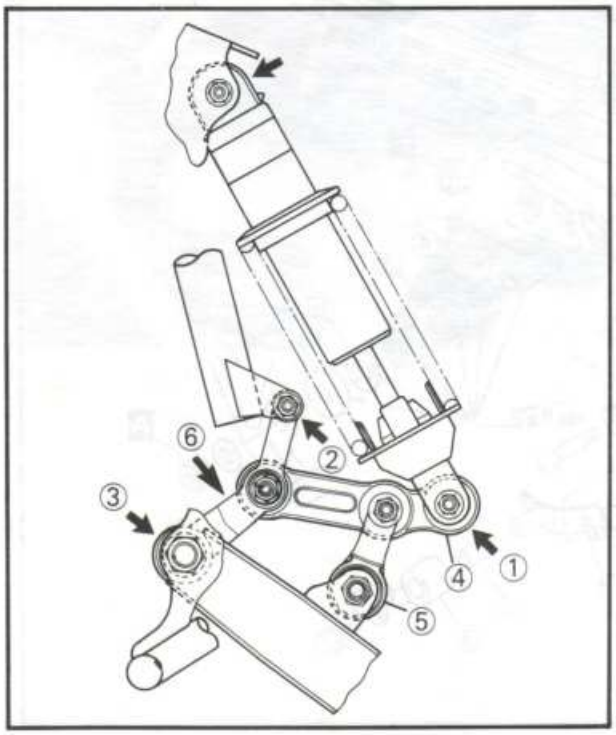


FREE PLAY INSPECTION

1. Check:
   - Swingarm side play ①
     Side play→Inspect bush/bearing. Replace as required.
   - Swingarm up and down movement ②
     Tightness/Binding/Rough spots→Replace bearings.

Free play inspection steps:
- Remove the rear wheel and rear shock absorber.
- Inspect swingarm side play by moving it from side to side. (There should be on noticeable side play)
- Inspect swingarm up and down movement by moving it up and down.

Free Play:
0 ~ 1 mm (0 ~ 0.04 in)



REMOVAL

1. Remove:
   - Shock absorber lower securing bolt ①
   - Relay bracket top mounting bolt ②
   - Pivot shaft ③
   - Swingarm assembly

2. Remove:
   - Relay arm ④
   - Connecting rod ⑤
   - Relay bracket ⑥
   - Chain tensioner



INSPECTION

1. Wash the bearings in a solvent.
2. Inspect:
   - Bearings (Needle/Race)
   - Bushes
   - Oil seals

   Damage/Wear/Rust→Replace.



3. Inspect:
   - Swingarm
   - Relay arm
   - Connecting rod
   - Relay bracket

   Damage/Wear→Repair or Replace.

INSTALLATION

Assemble the swingarm by reversing the removal procedure. Take care of the following precautions.



- Apply grease to the portions of the swingarm.

  Bush:
  Coat all inside surface of bushes with grease.

  Oil seal:
  Fill the lip portion of oil seals with grease.

  Thrust cover:
  Fill inside of thrust cover with grease.

  Pivot shaft:
  Coat outside surface of shaft with grease.

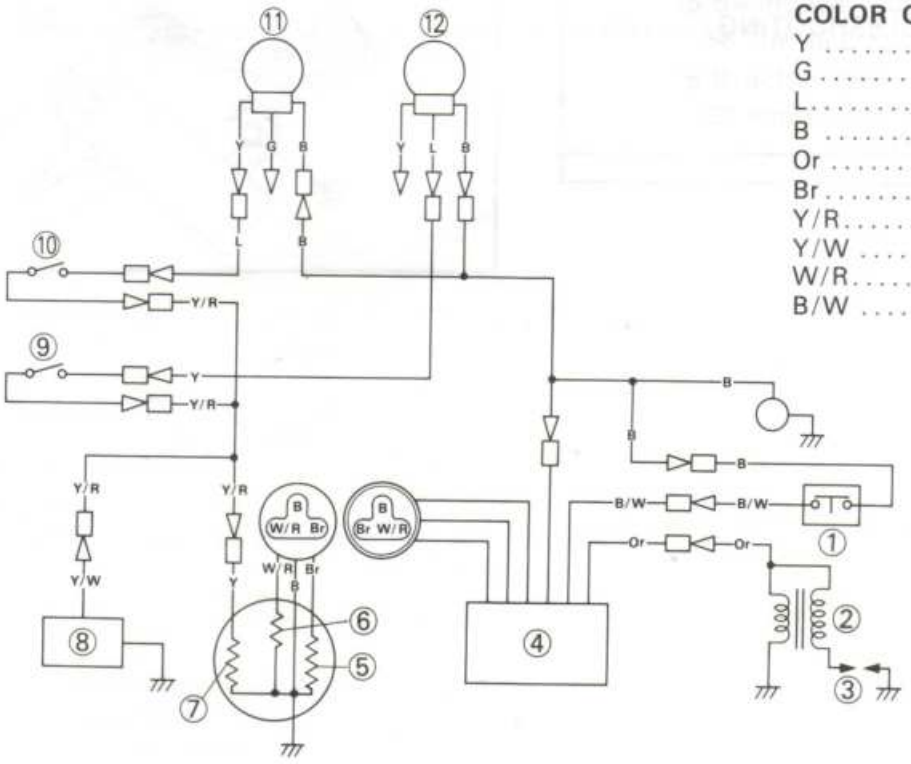
  Grease nipple:
  Using a grease gun lubricate the swingarm pivot point.

ELECTRICAL MAINTENANCE AND REPAIR

WIRING DIAGRAM AND ELECTRICAL COMPONENTS

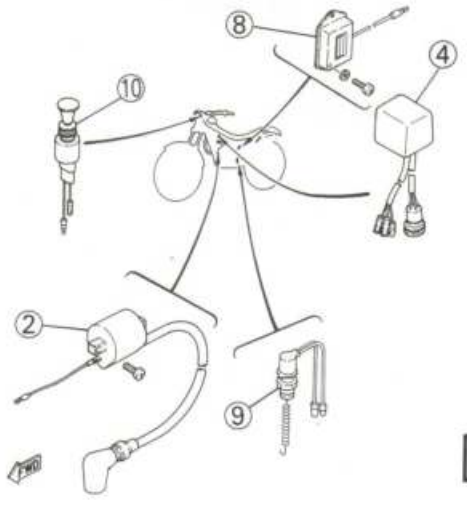
① "ENGINE STOP" switch
② Ignition Coil
③ Spark plug
④ CDI unit
⑤ Source Coil
⑥ Pickup Coil
⑦ Lighting Coil
⑧ Regulator
⑨ Brake switch
⑩ "LIGHTS" switch
⑪ Headlight
⑫ Tail/Brake light

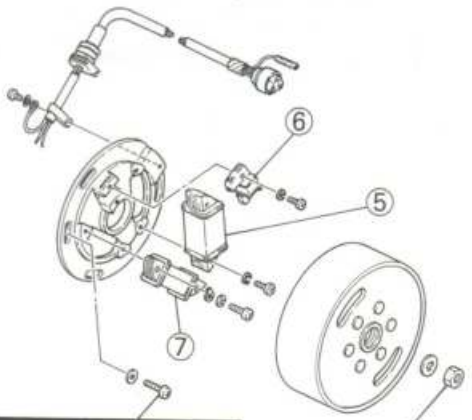
Pickup Coil ⑥ Resistance:
(W/R-B)
4.0Ω ± 10% at 20°C (68°F)
Source Coil ⑤ Resistance:
(Br-B)
240Ω ± 10% at 20°C (68°F)
Lighting Coil ⑦ Resistance:
(Y-B)
0.36Ω ± 10% at 20°C (68°F)



COLOR CODE

Y	Yellow
G	Green
L	Blue
B	Black
Or	Orange
Br	Brown
Y/R	Yellow/Red
Y/W	Yellow/White
W/R	White/Red
B/W	Black/White



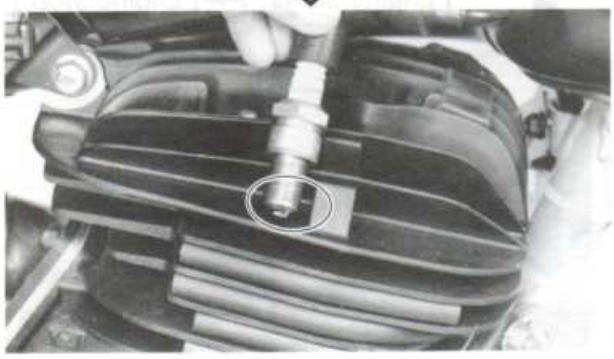


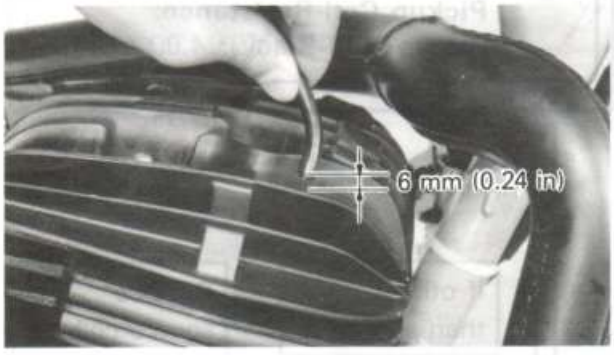
8 Nm (0.8 m•kg, 5.8 ft•lb)

85 Nm (8.5 m•kg 61 ft•lb)

5







IGNITION SYSTEM

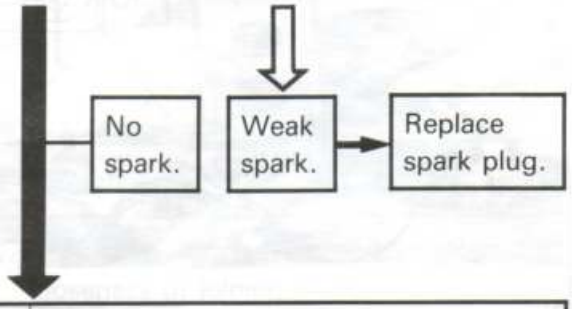
TROUBLESHOOTING

If the ignition spark is of poor quality or if there is no spark at all; use the following procedure, to locate and repair the problem.

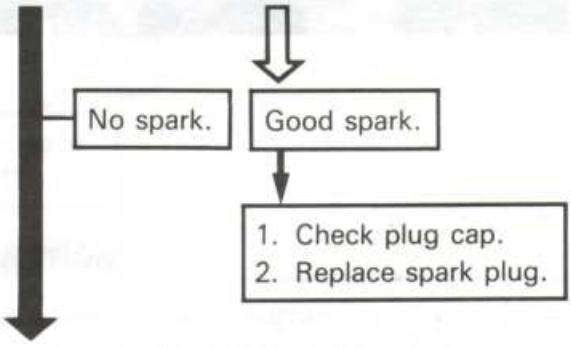
1	Spark plug test
Remove the spark plug and check the spark. Ground the spark plug cap to the cylinder head, and kick the starter.	

NOTE:

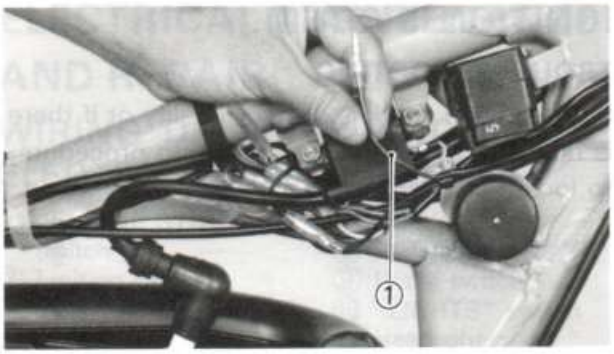
If the spark plug is oily or has carbon deposits, clean it or replace.



2	Spark gap test
Remove the spark plug cap and check the spark. Hold the high tension lead 6 mm (0.24 in) from the head, and kick the engine through.	



5

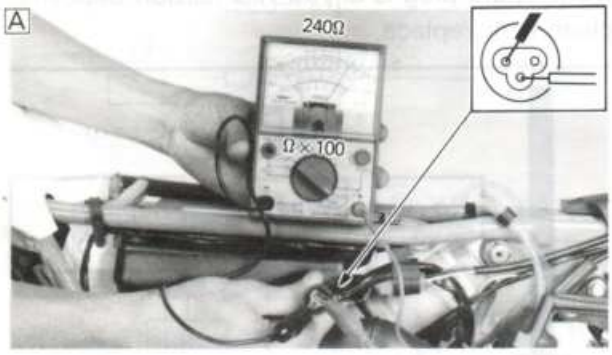


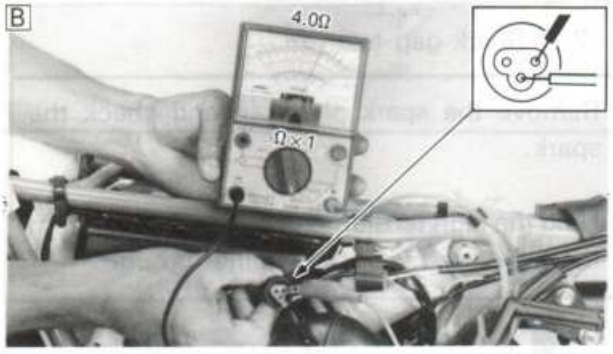
3	Engine stop switch

Disconnect the Black/White lead ① of engine stop switch at CDI unit.

→ Engine starts. → Replace Engine stop switch.

→ Engine does not start.





4	CDI Magneto (Source coil, Pickup coil) test

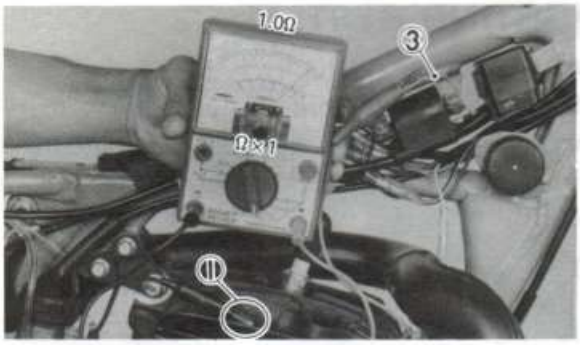
Disconnect the magneto leads, and use the pocket tester to check the resistance of the source coil [A] and/or pickup coil [B].

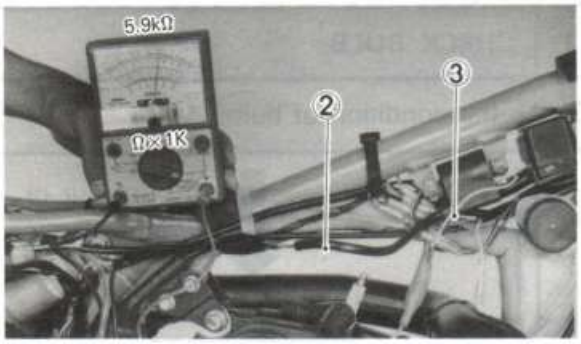
Source Coil Resistance:
[Brown-Black]: 240Ω ± 10%
Pickup Coil Resistance:
[White/Red-Black]: 4.0Ω ± 10%

→ If other than specified. → Replace source coil or pickup coil.

→ OK

5





5	Ignition coil test

Use the pocket tester to check the resistance of primary and secondary windings of the ignition coil.

Primary Coil Resistance:
1.0Ω ± 15%
Secondary Coil Resistance:
5.9kΩ ± 15%

① Ground
② Spark plug lead
③ Ignition coil lead (Orange)

If other than specified. → Replace ignition coil.

OK

6	Connectors check-up

1. Check the connectors and couplers for looseness of joining ends.
2. Keep the connectors and couplers from dirt or rust.

Wrong connection. → Correct

OK

Replace CDI unit.

CAUTION:

Make sure the wire harness is in a position it will not make contact with exhaust pipe, which could short out CDI unit.

LIGHTING SYSTEM

TROUBLESHOOTING

If the headlight or taillight will not come on, make checkups in the following sequence to determine the cause of trouble, and repair or replace the light (bulb).

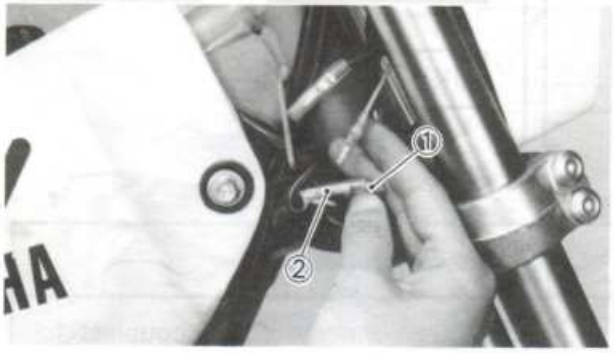


1	CHECK BULB
Check the condition of bulb.	

OK ↓

If burn our or wrong wattage. ↓

Replace bulb.

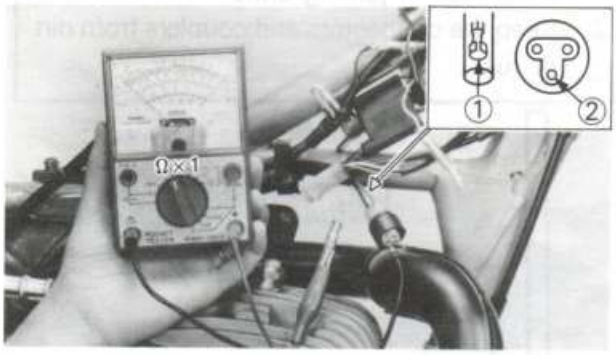


2	CHECK SWITCH
Disconnect the leads from the light switch, and connect the Yellow/Red lead ① directly to the Blue lead ②.	

Fails to come on. ↓

If comes on. ↓

Repair the light switch or replace it.



3	CHECK LIGHTING COIL
Check the lighting coil resistance.	
Lighting Coil Resistance: 0.36Ω ± 10% (Yellow ① – Black ②)	

OK ↓

If other than specified ↓

Replace lighting coil.

5

APPENDICES

TROUBLESHOOTING GUIDE

ENGINE IS HARD TO START OR DOES NOT START.

Ignition System	
Possible Cause	Remedy
1. Spark plug is wet.	• Clean or replace
2. Ignition coil is faulty.	• Replace
3. CDI unit is faulty.	• Replace
4. CDI magneto is faulty (Pickup coil, source coil)	• Replace
5. Ignition timing is incorrect.	• Adjust
6. Lead is broken, shorted or disconnected.	• Repair, replace or connect
7. Engine stop switch is shorted.	• Repair or replace
Compression System	
Possible Cause	Remedy
1. Piston rings are sticking or worn.	• Replace
2. Cylinder or piston is worn or scratched.	• Repair or replace
3. Compression leaks passing cylinder head gasket (Head is distorted.)	• Replace (or repair)
4. Crankshaft side oil seal is faulty.	• Replace
5. Air leaks through crankcase sealing surfaces.	• Repair
Air/Fuel System	
Possible Cause	Remedy
1. Carburetor pilot jet is clogged.	• Clean
2. Fuel cock or pipe is clogged.	• Clean
3. Float valve or float is faulty. (Float height is too high or too low.)	• Replace (remove gasoline from crankcase)
4. Reed valve is broken or deformed.	• Replace
5. Fuel tank filler cap or carburetor breather pipe is clogged.	• Clean
6. Air screw is improperly adjusted.	• Adjust
7. Fuel is deteriorated.	• Replace
8. Oil-gas mixing ratio is incorrect.	• Replace
9. Air leakes through carburetor joints.	• Retighten or replace gasket.

POOR HIGH SPEED PERFORMANCE

Ignition System	
Possible Cause	Remedy
1. Spark plug is dirty or plug gap is too narrow.	• Clean, repair or replace.
2. CDI unit is faulty.	• Replace
3. CDI magneto is faulty.	• Replace
4. Ignition coil is faulty.	• Replace
5. Ignition timing is incorrect.	• Adjust
6. Loose wire connection.	• Repair
Compression System	
Possible Cause	Remedy
1. Piston rings are sticking or worn.	• Replace
2. Cylinder or piston is worn or scratched.	• Repair or replace
3. Compression leakage through crankcase sealing surfaces or crankshaft side oil seal.	• Repair or replace
4. Carbon deposits in combustion chamber (Piston, Cylinder head).	• Decarbonize
Air/Fuel System	
Possible Cause	Remedy
1. Clogged carburetor jets.	• Clean
2. Improperly adjusted main jet (High speed)	• Adjust
3. Improperly adjusted jet needle (Medium speed)	• Adjust
4. Incorrect fuel level	• Adjust
5. Dirty or clogged air cleaner element	• Clean
6. Clogged fuel tank filler cap or carburetor breather pipe.	• Clean
7. Clogged fuel cock or kinked fuel pipe.	• Clean or repair
8. Deteriorated fuel.	• Replace
9. Improper oil-gas mixing ratio	• Replace
10. Cracked or broken exhaust pipe (Leakage of exhaust gases).	• Replace

OVERHEAT

Possible Cause	Remedy
1. Incorrect air-fuel mixture	• Adjust
2. Air leaks through carburetor joint.	• Repair or replace
3. Incorrect ignition timing	• Adjust
4. Carbon builds up in cylinder head or on piston head.	• Decarbonize
5. Improper spark plug heat range (too hot)	• Replace
6. Fuel is deteriorated or oil-gas mixing ratio is incorrect.	• Replace

TRANSMISSION AND SHIFTER

Trouble	Possible Cause	Remedy
Gears slip off	1. Gear dogs are worn.	• Replace
	2. Shift forks are bent. (burnt or worn)	• Replace
	3. Shift cam stopper spring is fatigued.	• Replace
Gear shifts skipping over the next.	1. Shift cam stopper spring is fatigued.	• Replace
	2. Shift forks are bent. (burnt or worn)	• Replace
Gear does not select	1. Shift cam is worn. (broken)	• Replace
	2. Change shaft is bent.	• Replace
	3. Shift arm spring is broken.	• Replace
	4. Gears are broken.	• Removal (Replace)
Shift pedal does not return.	1. Change return spring is broken.	• Replace
	2. Change shaft is bent.	• Replace

CLUTCH

Trouble	Possible Cause	Remedy
Clutch slips	1. Friction plate is worn.	• Replace
	2. Clutch plate is worn.	• Replace
	3. Clutch spring is fatigued.	• Replace
	4. Pressure plate is deformed.	• Replace
	5. Clutch play is too small.	• Adjust
	6. Clutch adjustment is incorrect.	• Adjust
	7. Match marks of clutch boss and pressure plate does not aligned.	• Reassemble
Clutch drags	1. Clutch plate is warped.	• Replace
	2. Cluth locknut is loosen.	• Replace
	3. Friction plate is broken.	• Replace
	4. Clutch play is too much.	• Adjust
	5. Oil viscosity is incorrect.	• Replace

CHASSIS

Steering head is loose	
Possible Cause	Remedy
1. Roller is worn. 2. Steering nut is loose.	• Replace • Retighten

Wheels have excessive run-out	
Possible Cause	Remedy
1. Bearing is worn. 2. Rim has dent. 3. Spokes are loose (or broken). 4. Axle nut is loose.	• Replace • Repair or replace • Retighten or replace • Retighten

Brakes		
Trouble	Possible Cause	Remedy
Faulty	1. Brake shoes are worn. 2. Brake is improperly adjusted. 3. Brake drum contains water. 4. Lining is greasy.	• Replace • Adjust • Clean • Degrease or replace
Not return smoothly	1. Wire is starved for oil. 2. Camshaft is starved for grease. 3. Return spring or brake shoe spring is broken. 4. Brake pedal axle is starved for grease.	• Grease or replace • Grease • Replace • Grease

Frame and Swingarm	
Possible Cause	Remedy
1. Frame is cracked. 2. Rear arm is bent. 3. Rear arm is cracked. 4. Bushing is worn. 5. Bushing lacks oil.	• Weld, reinforce or replace • Repair or replace • Replace • Replace • Lubricate

HEADLIGHT/TAILLIGHT

Trouble	Possible Cause	Remedy
Faulty	1. Burn out bulb. 2. Lead is broken, shorted or disconnected. 3. Lighting coil is faulty. 4. "LIGHTS" switch is faulty. 5. Regulator is faulty.	• Replace • Repair or replace • Replace • Replace • Replace

SPECIFICATIONS

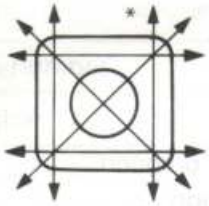
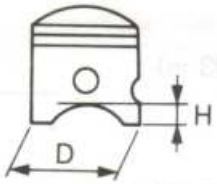
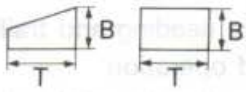
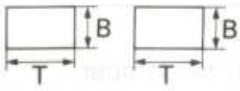
I. GENERAL SPECIFICATIONS

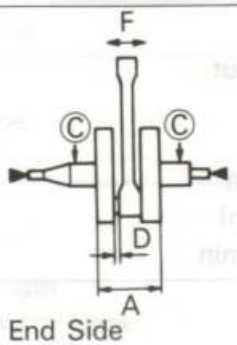
Model	TY350S
Model Code Number	1VY
Vehicle identification number	JYA1VY00*GA000101
Engine Starting Number	1VY-000101
Dimensions:	
Overall Length	2,025 mm (79.7 in)
Overall Width	805 mm (31.7 in)
Overall Height	1,085 mm (42.7 in)
Seat Height	745 mm (29.3 in)
Wheelbase	1,320 mm (52.0 in)
Minimum Ground Clearance	325 mm (12.8 in)
Basic Weight (With Oil and Fuel)	89 kg (196 lb)
Engine:	
Engine Type	Air, cooled 2-stroke, gasoline
Induction System	Reed valve
Cylinder Arrangement	Single cylinder, forward inclined
Displacement	341 cm^3
Bore × Stroke	80 × 68 mm (3.150 × 2.652 in)
Compression Ratio	5.3:1
Starting System	Kick starter
Lubrication System:	
Type	Premix
Oil Type or Grade:	
Engine oil/Premix Ratio	Yamalube "R"/50:1 Castrol A545, A747, R30/80:1
Transmission Oil	SAE 10W30 type SE motor oil
Oil Capacity	
Periodic Oil Change	0.75 L (0.66 Imp qt, 0.79 US qt)
Total Amount	0.80 L (0.70 Imp qt, 0.85 US qt)
Air Filter	Wet type element
Fuel:	
Type	Premix Premium gasoline
Tank Capacity	3.5 L (0.77 Imp gal, 0.93 US gal)
Carburetor:	
Type/Quantity	Y26P/1
Manufacturer	TEIKEI
Spark plug:	
Type/Manufacturer	BP6EV/NGK
Gap	0.7 ~ 0.8 mm (0.028 ~ 0.031 in)

Model	TY350S
Clutch Type	Wet, multiple-disc
Transmission:	
Primary Reduction System	Helical gear
Primary Reduction Ratio	71/20 (3.550)
Secondary Reduction System	Chain drive
Secondary Reduction Ratio	35/10 (3.500)
Transmission Type	Constant mesh, 6-speed
Operation	Left foot operation
Gear Ratio 1st	39/13 (3.000)
2nd	37/15 (2.467)
3rd	31/16 (2.938)
4th	31/22 (1.409)
5th	26/27 (0.963)
6th	21/31 (0.677)
Chassis:	
Frame Type	Diamond
Caster Angle	23°
Trail	49 mm (1.93 in)
Tire:	
Type	With tube
Size Manufacturer Front	2.75-21/MICHELIN
Rear	4.00-18/MICHELIN
Brake:	
Front Brake Type	Drum brake (leading and trailing)
Operation	Right hand operation
Rear Brake Type	Drum brake (leading and trailing)
Operation	Right foot operation
Suspension:	
Front Suspension	Telescopic fork
Rear Suspension	Swingarm (New monocross suspension)
Shock Absorber:	
Front Shock Absorber	Coil spring, oil damper
Rear Shock Absorber	Gas, coil spring, oil damper
Wheel Travel:	
Front Wheel Travel	180 mm (7.09 in)
Rear Wheel Travel	160 mm (6.30 in)
Electrical:	
Ignition System	CDI
Generator System	Flywheel magneto
Headlight Type	Bulb type
Bulb Wattage/Quantity	
Headlight	6V, 25W/25W × 1
Tail/Brake Light	6V, 3W/10W × 1

II. MAINTENANCE SPECIFICATIONS

A. Engine

Model	TY350S
Cylinder Head: Warp Limit 	<0.03 mm (0.0012 in)> *Lines indicate straightedge measurement.
Cylinder: Bore Size Taper Limit Out of Round Limit	 80.00 ~ 80.02 mm (3.150 ~ 3.151 in) <0.05 mm (0.002 in)> <0.01 mm (0.0004 in)>
Piston: Piston Size "D" Measuring Point "H" Piston Clearance <Limit> Piston offset 	 79.94 ~ 80.00 mm (3.147 ~ 3.150 in) 10 mm (0.4 in) 0.040 ~ 0.045 mm (0.0016 ~ 0.0018 in) <0.1 mm (0.004 in)> 1.0 mm (0.04 in)/EX-side
Piston Ring: Top Ring: Type Dimensions (B × T)  End Gap (Installed)/<Limit> Side Clearance/<Limit> 2nd Ring: Type Dimensions (B × T)  End Gap (Installed)/<Limit> Side Clearance/<Limit>	 Plain 1.5 × 3.2 mm (0.059 × 0.130 in) 0.30 ~ 0.45 mm (0.012 ~ 0.018 in) <1.0 mm (0.04 in)> 0.04 ~ 0.08 mm (0.0016 ~ 0.0032 in) <0.12 mm (0.0047 in)> Plain 1.5 × 3.2 mm (0.059 × 0.130 in) 0.30 ~ 0.45 mm (0.012 ~ 0.018 in) <1.0 mm (0.04 in)> 0.03 ~ 0.07 mm (0.0012 ~ 0.0028 in) <0.12 mm (0.0047 in)>

Model	TY350S
Crankshaft: 	
Crank Width "A"	65.95 ~ 66.00 mm (2.597 ~ 2.598 in)
Run Out Limit "C"	<0.03 mm (0.0012 in)>
Connecting Rod Big End Side Clearance "D"	0.25 ~ 0.75 mm (0.0098 ~ 0.0295 in)
Connecting Rod Axial Play	0.4 ~ 1.0 mm (0.016 ~ 0.04 in)
<Limit>	<2.0 mm (0.08 in)>
Clutch:	
Friction Plate Thickness/Quantity	2.9 ~ 3.1 mm (0.11 ~ 0.12 in)/6 pcs.
Wear Limit	<2.7 mm (0.11 in)>
Clutch Plate Thickness/Quantity	1.5 ~ 1.7 mm (0.059 ~ 0.067 in)/5 pcs.
Warp Limit	<0.05 mm (0.002 in)>
Clutch Spring Free Length/Quantity	31.9 mm (1.26 in)/6 pcs.
Clutch Spring Minimum Length	<29.9 mm (1.18 in)>
Clutch Housing Thrust Clearance	0.17 ~ 0.23 mm (0.0067 ~ 0.0090 in)
Clutch Release Method	Inner push, cam push
Push Rod Bending Limit	<0.2 mm (0.008 in)>
Transmission:	
Main Axle Deflection Limit	<0.01 mm (0.0004 in)>
Drive Axle Deflection Limit	<0.01 mm (0.0004 in)>
Shifter:	
Shifting Type	Cam drum
Guide Bar Bending Limit	<0.05 mm (0.0020 in)>
Kick Starter:	
Type	Kick and mesh type
Kick Clip Friction Force [Min ~ Max] 	P = 0.8 ~ 1.2 kg (1.8 ~ 2.6 lb)
Air Filter Oil Grade (Oiled Filter)	Foam-air-filter oil or SAE 10W30 type SE motor oil
Carburetor:	
Type/Manufacturer	Y26P/TEIKEI
I.D. Mark	46Y00
Main Jet (M.J.)	#145
Air Jet (A.J.)	ø2.5
Jet Needle-clip Position (J.N.)	5C95-3
Needle Jet (N.J.)	S-00
Cutaway (C.A.)	2.5

SPECIFICATIONS

Model		TY350S
Pilot Jet	(P.J.)	#37
Air Screw	(A.S.)	2-1/4 turns out
Valve Seat Size	(V.S.)	ø2.0
Starter Jet	(G.S.)	ϕ0.7
Float Height	(F.H.)	22.0 ± 1.0 mm (0.87 ± 0.04 in)
Idling Speed		1,100 ± 50 r/min
Reed Valve:		
Valve Stopper Height		6.0 ± 0.3 mm (0.236 ± 0.012 in)
Valve Bending Limit		0.6 mm (0.024 in)

Tightening Torque	Thread Size	Q'ty	Nm	m•kg	ft•lb
Spark plug	M14 × 1.25	1	20	2.0	14.0
Cylinder head -Nut	M 8 × 1.25	6	22	2.2	16.0
-Stud bolt	M 8 × 1.25	6	13	1.3	9.4
Cylinder-Nut	M10 × 1.25	4	35	3.5	25.0
-Stud bolt	M10 × 1.25	4	13	1.3	9.4
Intake manifold	M 6 × 1.0	4	11	1.1	8.0
Crankcase	M 6 × 1.0	13	12	1.2	8.7
Crankcase cover (R)	M 6 × 1.0	12	10	1.0	7.2
Crankcase cover (L)	M 6 × 1.0	2	10	1.0	7.2
Bearing cover plate	M 6 × 1.0	4	10	1.0	7.2
Holder	M 8 × 1.25	1	16	1.6	11.0
Plate	M 6 × 1.0	1	10	1.0	7.2
Oil drain bolt	M12 × 1.5	1	20	2.0	14.0
Kick starter lever	M12 × 1.0	1	59	5.9	43.0
Primary drive gear	M18 × 1.0	1	75	7.5	54.0
Clutch	M20 × 1.0	1	75	7.5	54.0
Push rod	M 6 × 1.0	1	10	1.0	7.2
Clutch spring	M 6 × 1.0	1	10	1.0	7.2
Drive sprocket	M20 × 1.0	6	75	7.5	54.0
Stopper lever	M 6 × 1.0	1	14	1.4	10.0
Change pedal	M 6 × 1.0	1	10	1.0	7.2
Magneto rotor	M10 × 1.25	1	85	8.5	61.0
Magneto base plate	M 6 × 1.0	2	8	0.8	5.8

Chassis

Model	TY350S
Steering System:	
Steering Bearing Type	Taper roller bearing
Lock to Lock Angle	120°
Front Suspension	
Front Fork Travel	180 mm (7.09 in)
Fork Spring Free Length	402 mm (15.8 in)
Fork Spring Free Length Limit	<398 mm (15.7 in)>
Collar Length	80 mm (3.15 in)
Spring Rate, Stroke	K_1 = 2.697 N/mm (0.275 kg/mm, 15.4 lb/in)/ 0 ~ 80 mm (0 ~ 3.15 in) K_2 = 3.53 N/mm (0.36 kg/mm, 20.2 lb/in)/ 80 ~ 160 mm (3.15 ~ 6.30 in)
Oil Capacity and Oil Level	300 cm^3 (10.6 Imp oz, 10.1 US oz)/99 mm (3.9 in) (From top of inner tube fully compressed without spring.)
Oil Grade	Yamaha Fork & Shock oil 10 wt
Rear Suspension:	
Shock Absorber Travel	55 mm (2.17 in)
Spring Free Length	155 mm (6.10 in)
Spring Free Length Limit	<153 mm (6.02 in)>
Fitting Length	143 mm (5.63 in)
Spring Rate, Stroke	K = 68.6 N/mm (7.0 kg/mm, 392 lb/in)/0 ~ 69 mm (0 ~ 2.72 in)
Enclosed Gas Pressure	1,471 kPa (15 kg/cm^2, 213.3 psi)
Rear Arm:	
Swingarm Free Play Limit	
End	<1.0 mm (0.04 in)>
Side	<0.2 mm (0.008 in)>
Wheel:	
Front Wheel Type	Spoke wheel
Rear Wheel Type	Spoke wheel
Front Rim Size/Material	1.60 × 21/Aluminum
Rear Rim Size/Material	2.15 × 18/Aluminum
Rim Runout Limit	
Vartical	<2.0 mm (0.08 in)>
Lateral	<2.0 mm (0.08 in)>
Drive Chain:	
Type/Manufacturer	520DS/DAIDO
Number of Links	92 Links
Chain Free Play	20 ~ 30 mm (0.8 ~ 1.2 in)

6

SPECIFICATIONS

Model		TY350S
Drum Brake:		
Type	Front	Leading and trailing
	Rear	Leading and trailing
Drum Inside Dia	Front	130 mm (5.12 in)
	Rear	110 mm (4.33 in)
<Limit>	Front	<131 mm (5.16 in)>
	Rear	<111 mm (4.37 in)>
Lining Thickness		4 mm (0.16 in)
<Limit>		<2 mm (0.08 in)>
Shoe Spring Free Length	Front/Rear	36.5 mm (1.44 in)/34.5 mm (1.36 in)
Brake Lever & Brake Pedal:		
Brake Lever Free Play/Position		5~8 mm (0.2~0.3 in)/at lever pivot
Brake Pedal Free Play/Height		10~15 mm (0.8~1.2 in)/0 mm (0 in) (Vertical height below footrest top)
Clutch Lever Free Play/Position		2~3 mm (0.08 ~0.12 in)/at lever pivot

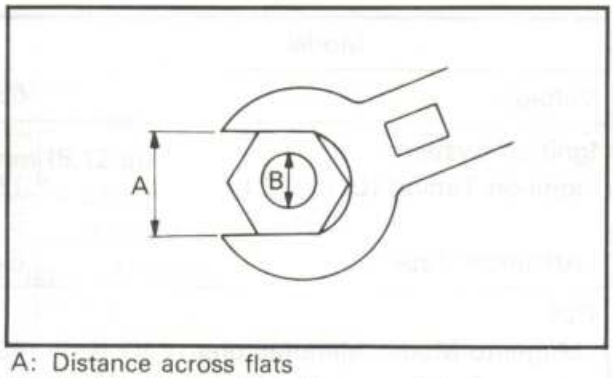
Tightening Torque:	Thread Size	Q'ty	Nm	m•kg	ft•lb
Front wheel axle-Nut	M14×1.5	1	58	5.8	42.0
Handle crown-Inner tube	M8 ×1.25	2	23	2.3	17.0
-Steering shaft	M14×1.25	1	54	5.4	39.0
-Handlebar holder	M8 ×1.25	4	23	2.3	17.0
Steering fitting nut	M25×1.0	1	10	1.0	7.2
Engine bracket (Front) -Frame	M8 ×1.25	2	30	3.0	22.0
-Engine	M8 ×1.25	2	30	3.0	22.0
(Rear) -Engine	M8 ×1.25	1	30	3.0	22.0
Engine stay-Cylinder head	M8 ×1.25	1	30	3.0	22.0
-Frame	M6 ×1.0	2	13	1.3	9.4
Rear wheel axle-Nut	M14×1.5	1	85	8.5	61.0
Sprocket wheel-Hub	M8 ×1.25	4	30	3.0	22.0
Front fork-Axle holder	M8 ×1.25	1	20	2.0	14.0
Rear shock absorber-Frame	M8 ×1.25	1	30	3.0	22.0
Pivot shaft-Frame	M16×1.5	1	85	8.5	61.0
Brake cam lever	M6 ×1.0	2	10	1.0	7.2
Relay arm-Bracket relay	M10×1.25	1	32	3.2	23.0
-Rear shock absorber	M8 ×1.25	1	30	3.0	22.0
-Connecting rod	M10×1.25	1	32	3.2	23.0
Rear arm -Connecting rod	M12×1.25	1	58	5.8	42.0
Bracket relay -Frame	M8 ×1.25	1	30	3.0	22.0

Electrical

Model	TY350S
Voltage	6V
Ignition System: Ignition Timing (B.T.D.C.) Advancer Type	 12°/2,500 r/min B.T.D.C. 2.6 mm (0.10 in) Electrical
CDI Magneto-Model/Manufacturer Pickup Coil Resistance (Color) Source Coil Resistance (Color) CDI Unit-Model/Manufacturer	 F3T37373/MITSUBISHI 4.0Ω ± 10% at 20°C (68°F) (White/Red-Balck) 240Ω ± 10% at 20°C (68°F) (Brown-Black) F8T08071/MITSUBISHI
Ignition Coil: —Model/Manufacturer Minimum Spark Gap Primary Winding Resistance Secondary Winding Resistance	 F6T50578/MITSUBISHI 10 kV or more at 500 r/min 15 kV or less at 8,000 r/min 6 mm (0.24 in) 1.0Ω ± 15% at 20°C (68°F) 5.9kΩ ± 15% at 20°C (68°F)
Lighting System: Lighting Coil Resistance (Color) Lighting Voltage Min. Max.	 0.36Ω ± 10% (Yellow—Black) 5.5V or more at 3,000 r/min 7.6V or less at 8,000 r/min
Voltage Regulator: Type Model/Manufacturer Regulated voltage	 Semi conductor short circuit type TS6HRY-L/MITSUBISHI 6.8 ~ 7.2 V

GENERAL TORQUE SPECIFICATIONS

This chart specifies torque for standard fasteners with standard I.S.O. pitch threads. Torque specifications for special components or assemblies are included in the applicable sections of this book. To avoid warpage, tighten multi-fastener assemblies in a crisscross fashion, in progressive stages, until full torque is reached. Unless otherwise specified, torque specifications call for clean, dry threads. Components should be at room temperature.



A: Distance across flats
B: Outside thread diameter

A (Nut)	B (Bolt)	TORQUE SPECIFICATION		
		Nm	m•kg	ft•lb
10 mm	6 mm	5	0.6	4.5
12 mm	8 mm	15	1.5	11.0
14 mm	10 mm	30	3.0	22.0
17 mm	12 mm	55	5.5	40.0
19 mm	14 mm	85	8.5	61.0
22 mm	16 mm	130	13.0	94.0

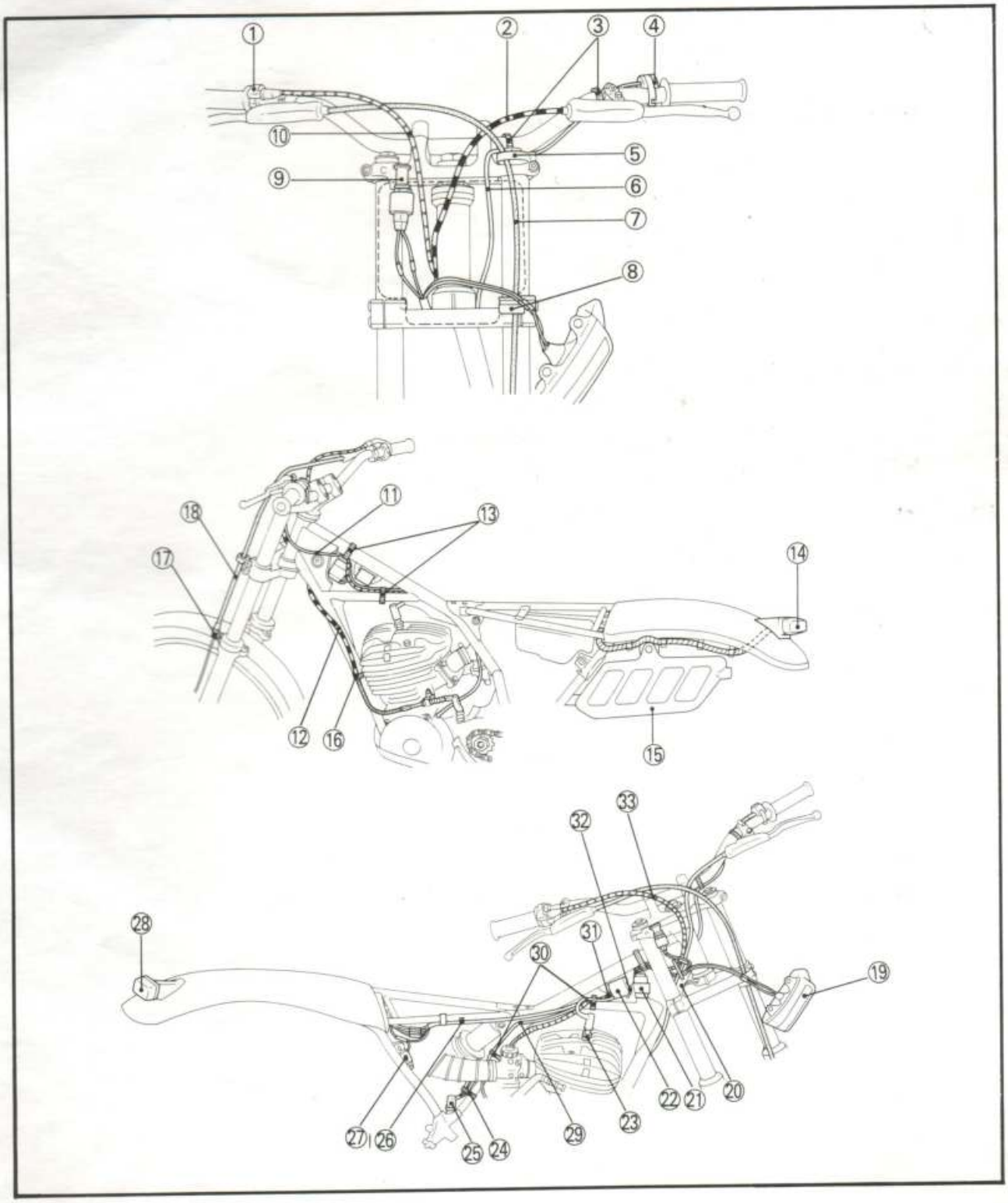
CONVERSION TABLES

METRIC TO INCH SYSTEM			
	KNOWN	MULTIPLIER	RESULT
TORQUE	m•kg	7.233	ft•lb
	m•kg	86.80	in•lb
	cm•kg	0.0723	ft•lb
	cm•kg	0.8680	in•lb
WT.	kg	2.205	lb
	g	0.03527	oz
FLOW/ DISTANCE	km/ℓ	2.352	mpg
	km/hr	0.6214	mph
	km	0.6214	mi
	m	3.281	ft
	m	1.094	yd
	cm	0.3937	in
	mm	0.03937	in
VOL./ CAPACITY	cc (cm^3)	0.03382	oz (US liq)
	cc (cm^3)	0.06102	cu. in
	ℓ (liter)	2.1134	pt (US liq)
	ℓ (liter)	1.057	qt (US liq)
	ℓ (liter)	0.2642	gal (US liq)
MISC.	kg/mm	56.007	lb/in
	kg/cm^2	14.2234	psi (lb/in^2)
	Centigrade (°C)	9/5(°C) + 32	Fahrenheit (°F)

INCH TO METRIC SYSTEM			
	KNOWN	MULTIPLIER	RESULT
TORUQE	ft•lb	0.13826	m•kg
	in•lb	0.01152	m•kg
	ft•lb	13.831	cm•kg
	in•lb	1.1521	cm•kg
WT.	lb	0.4535	kg
	oz	28.352	g
FLOW/ DISTANCE	mpg	0.4252	km/ℓ
	mph	1.609	km/hr
	mi	1.609	km
	ft	0.3048	m
	yd	0.9141	m
	in	2.54	cm
	in	25.4	mm
VOL./ CAPACITY	oz (US liq)	29.57	cc (cm^3)
	cu. in	16.387	cc (cm^3)
	pt (US liq)	0.4732	ℓ (liter)
	qt (US liq)	0.9461	ℓ (liter)
	gal (US liq)	3.785	ℓ (liter)
MISC.	lb/in	0.017855	kg/mm
	psi (lb/in^2)	0.07031	kg/cm^2
	Fahrenheit (°C)	5/9(°F − 32)	Centigrade (°F)

CABLE ROUTING

① Throttle housing
② Clutch cable
③ Handlebar band
④ "ENGINE STOP" switch
⑤ Guide
⑥ "ENGINE STOP" switch lead
⑦ Front brake cable
⑧ Guide
⑨ "LIGHTS" switch
⑩ Throttle cable
⑪ "ENGINE STOP" switch lead
⑫ Clutch cable
⑬ Band
⑭ Tail/brake light
⑮ Silencer
⑯ Clamp
⑰ Cable holder
⑱ Front brake cable
⑲ Headlight
⑳ Guide
㉑ CDI unit
㉒ Ignition coil
㉓ Spark plug
㉔ Band
㉕ Brake switch
㉖ Clamp
㉗ Regulator
㉘ Tail/brake light
㉙ CDI magneto lead
㉚ Band
㉛ High tension cord
㉜ Ignition coil lead
㉝ Throttle cable



6