YAMAHA 1985

TY350N

OWNER'S MANUAL AND SERVICE

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TY350N
OWNER'S MANUAL AND SERVICE
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IMPORTANT NOTICE

THIS MACHINE IS DESIGNED AND MANUFACTURED FOR COMPETITION USE ONLY. IT IS ILLEGAL TO OPERATE THIS MACHINE ON ANY PUBLIC STREET, ROAD OR HIGHWAY. SUCH USE IS PROHIBITED BY LAW. PLEASE CHECK YOUR LOCAL RIDING LAWS AND REGULATIONS BEFORE OPERATING THIS MACHINE.

SAFETY WARNINGS:

1. **GASOLINE IS HIGHLY FLAMMABLE:**
   * **Always turn off the engine when refueling.**
   * **Take care not to spill on the engine or exhaust pipe/muffler, when refueling.**
   * **If any gasoline spills on the engine or exhaust pipe/muffler, wipe it off immediately.**
   * **Never refuel while smoking or in the vicinity of an open flame.**
2. **If you should swallow some gasoline or inhale a lot of gasoline vapor, or allow some gasoline to get in your eye(s), see your doctor immediately. If any gasoline spills on your skin or clothing, immediately wash it with soap and water, and change your clothes.**
3. **Do not touch any moving or heated areas.**
   * **The engine and exhaust pipe/muffler are heated up. 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 can easily overturn.**
4. **When transporting the machine in another vehicle, be sure it is kept upright and that the fuel cock is turned to the "OFF" position. If it should lean over, gasoline may leak out of the carburetor or fuel tank.**
5. **Never start your engine or let it run for any length of time in a closed area. The exhaust fumes are poisonous and can cause loss of consciousness and death within a short time. Always operate your machine in an area with adequate ventilation.**
6. **Always wear a helmet, gloves, boots, trousers, and jacket.**

INTRODUCTION

This manual will provide you with a good basic understanding of features, operation, and basic maintenance and inspection items of this vehicle.
PLEASE READ THIS MANUAL CAREFULLY AND COMPLETELY BEFORE OPERATING YOUR NEW MACHINE. If you have any questions regarding the operation or maintenance of your machine, please consult your Yamaha dealer.

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

NOTE: A NOTE provides key information to make procedures easier or clearer.

CAUTION: A CAUTION indicates special procedures that must be followed to avoid damage to the machine.

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

NOTICE

Some data in this manual may become outdated due to improvements made to this model in the future. If there is any question you have regarding this manual or your machine, please consult your Yamaha dealer.

NOTE:

This manual should be considered a permanent part of this machine and should remain with it even if the machine is subsequently sold.

OVERSEAS SERVICE
OVERSEAS OPERATIONS
YAMAHA MOTOR CO., LTD.

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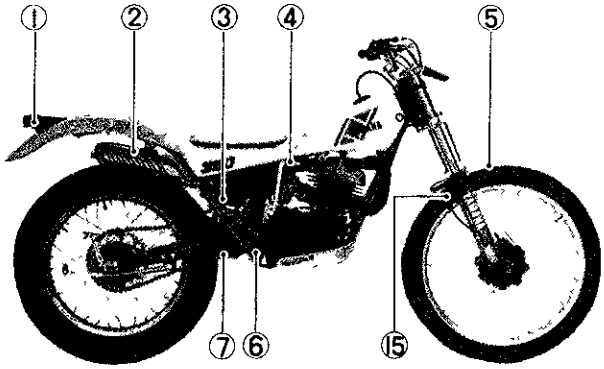
GENERAL INFORMATION

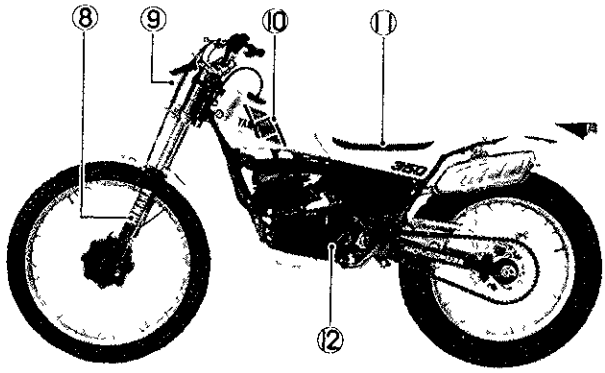
DESCRIPTION

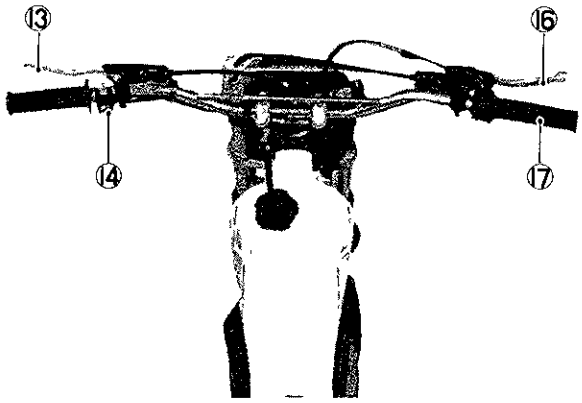
① Taillight
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⑥ Brake pedal
⑦ Footrest
⑧ Front fork
⑨ Headlight
⑩ Fuel tank
⑪ Seat
⑫ Change pedal
⑬ Clutch lever
⑭ "ENGINE STOP" switch
⑮ Speedometer
⑯ Brake lever
⑰ Throttle grip

NOTE:

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







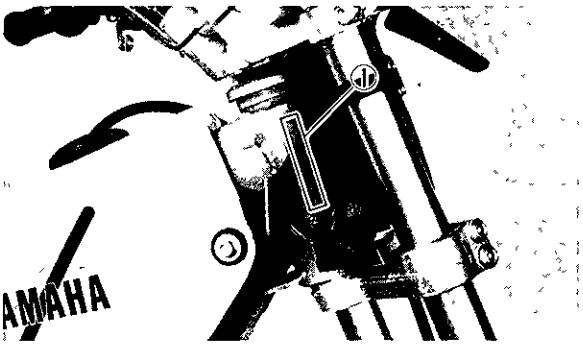
MOTORCYCLE IDENTIFICATION

Frame Serial Number

The frame serial number is stamped into the right side of the steering head pipe.

NOTE:

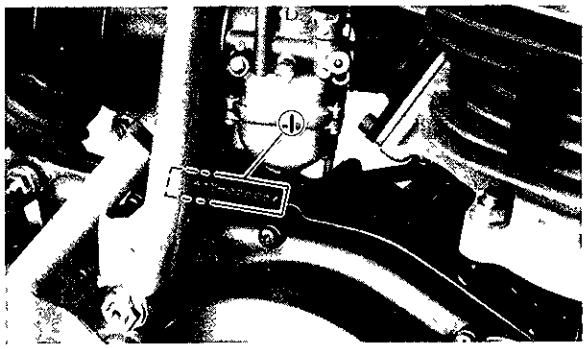
The first three digits of these numbers are for model identification; the remaining digits are the unit production number. Keep a record of these numbers for reference when ordering parts from a Yamaha dealer.



1 Frame serial number

Engine Serial Number

The engine serial number is stamped into the right side of the engine.

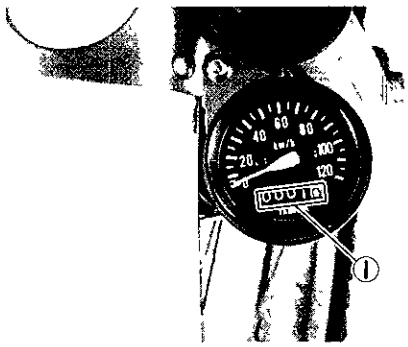


1 Engine serial number

CONTROL FUNCTIONS

Speedometer

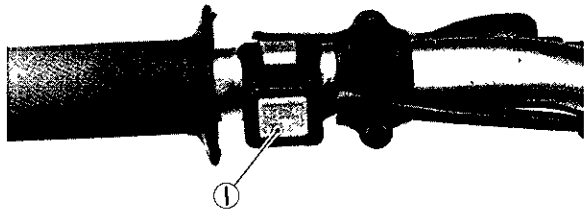
The trip odometer is built into the speedometer



1 Trip odometer

"ENGINE STOP" Switch

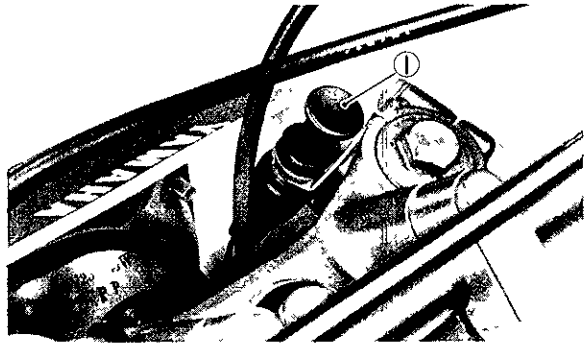
The "ENGINE STOP" switch is a safety device for use in an emergency such as when the machine overturns or when trouble occurs in the throttle system. The engine will not run when the "ENGINE STOP" switch is pushed to "OFF". In case of emergency, push the switch to "OFF".



1 "ENGINE STOP" switch

"LIGHTS" Switch

Pull the "LIGHTS" switch to the "ON" to turn on the headlight and taillight.



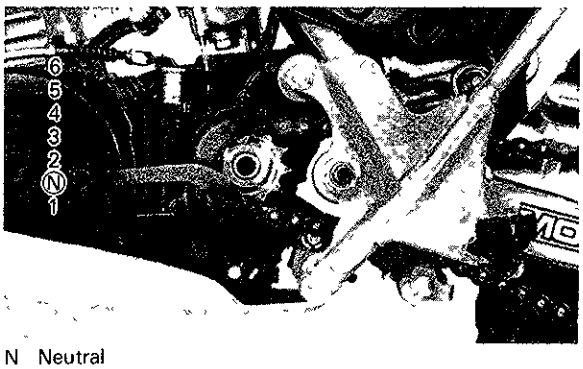
1 "LIGHTS" switch

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.



N Neutral

Front Brake Lever

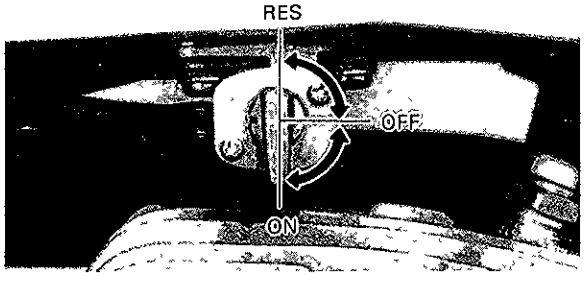
The front brake lever is located on the right handlebar. Pull it toward the handlebar to activate the front brake.

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:



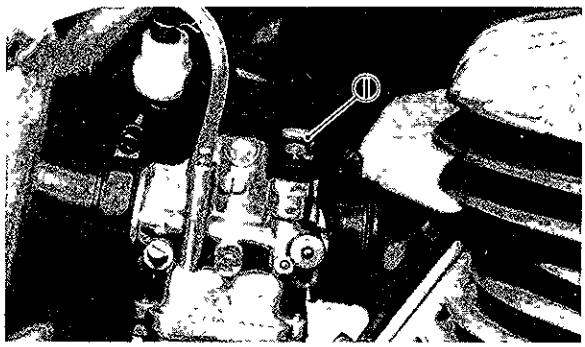
OFF: With the lever in this position, fuel will not flow. Always return the lever to this position when the engine is not running.

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 the it in to close the circuit.



1 Starter knob

Kick Starter

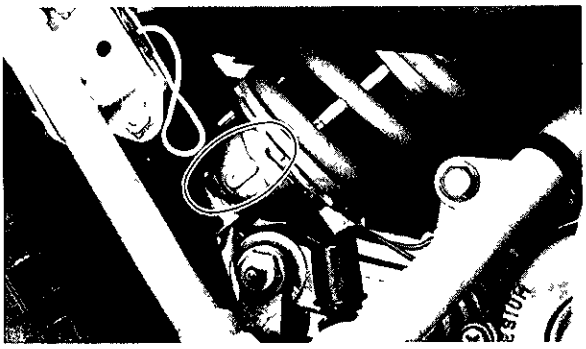
Rotate the kick starter away from the engine. Push the starter down lightly with your foot until the gears engage, then kick smoothly and forcefully to start the engine. This model has a primary kick starter so the engine can be started in any gear if the clutch is disengaged. In normal practices, however,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



1 Kick starter

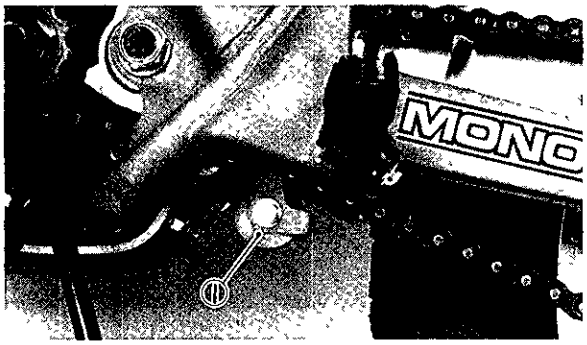
Rear Shock Absorber

The spring preload can be adjusted to suit machine's load and the operating conditions. Refer to page 2-12 for proper adjustment procedures.



Drive Chain Tensioner

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



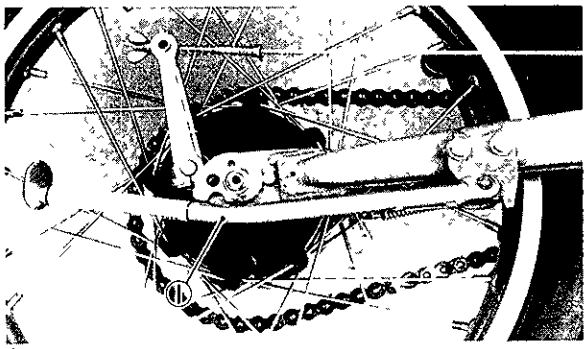
1 Drive chain tensioner

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

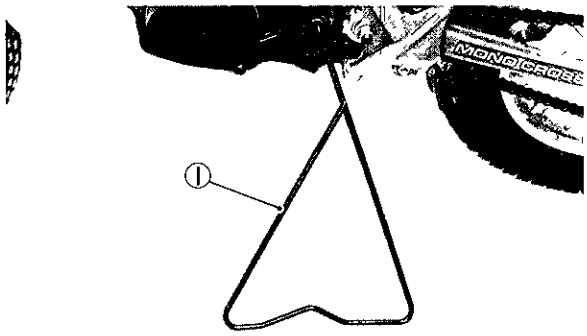
This sidestand is inserted into the drive sprocket shaft hole.

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.**



1 Detachable sidestand

PRE-OPERATION CHECKS

Before using this machine, check the following points

Item	Routine
Front brake/Rear brake	Check operation, condition and free play Adjust if necessary
Clutch	Check operation, condition and free play Adjust if necessary.
Throttle grip/Housing	Check for smooth operation Lubricate/Adjust if necessary
Transmission oil	Check condition. Replace if necessary
Drive chain	Check chain tension and condition Adjust if necessary
Wheels/Tires	Check tire pressure, wear, damage, spoke tighteness
Control/Meter cables	Check for smooth operation Lubricate if necessary.
Brake and change pedal shafts	Check for smooth operation Lubricate if necessary
Brake and clutch lever pivots	Check for smooth operation Lubricate if necessary.
Sidestand pivot	Check for smooth operation. Lubricate if necessary.
Fittings/Fasteners	Check all chassis fittings and fasteners. Tighten/Adjust, if necessary.
Fuel tank	Check fuel level/top-up as required
Lights	Check for proper operation.

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.

Brake Lever and Brake pedal (See page 2-10 for more detail)
Check for correct free play in the front brake lever and rear brake pedal. Make sure they are working properly. Check the brakes at low speed shortly after starting out. If the free play is incorrect, adjust it.

Clutch (See page 2-9 for more detail)
Check the free play in the clutch lever, and make sure the lever operates properly.
If the free play is incorrect, adjust it.

Throttle Grip (See page 2-8 for more detail)
Turn the throttle grip to see if it operates properly, and check the free play. Make sure the grip returns by spring force when released

Transmission Oil (See page 2-5 for more detail)
Check the condition of the transmission oil.

NOTE:
The transmission oil should be replaced at the specified intervals. Refer to page 2-1.

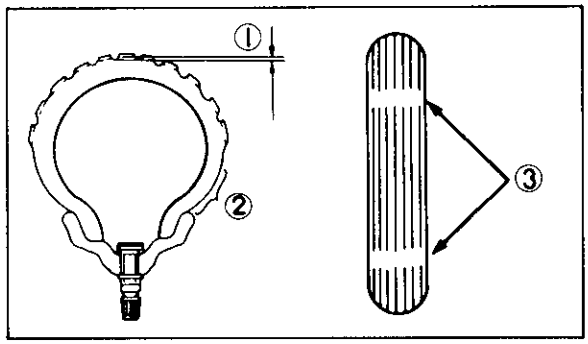
Recommended oil:
SAE 10W30 type SE motor oil
Oil capacity:
Total amount:
0.80 L (0.70 Imp qt, 0.85 US qt)
Periodic oil change
0.75 L (0.66 Imp qt, 0.79 US qt)

Tires
To ensure maximum performance, long service, and safe operation, note the following:
1. Tire air pressure
Always check and adjust the tire pressures before operating the machine.

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

	Front	Rear
Off-road riding	39.2 kPa (0.4 kg/cm², 6 psi)	29.4 kPa (0.3 kg/cm², 4 psi)

2. Tire inspection
Always check the tires before operating the machine. If a tire tread shows crosswise lines (minimum tread depth), if the tire has a nail or glass fragments in it, or if the side wall is cracked, contact a Yamaha dealer immediately and have him replace the tire.



1 Tread depth 2 Side wall 3 Wear indicator

FRONT.

Manufacture	Size	Type
MICHELIN	2.75-21	TRIAL

REAR·

Manufacture	Size	Type
MICHELIN	4.00-18	TRIAL

Minimum tire tread depth (front and rear)	1.0 mm (0.04 in)

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.

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.**

Wheels

To ensure maximum performance, long service, and safe operation, note the following:

1. 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.
2. 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.
3. 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.

Chain (See page 2-11 for more detail)

Check the general condition of the chain and check the chain slack before every ride. Lubricate and adjust the chain as necessary.

Lights

Check the headlight, and brake light to make sure they are in working condition.

Switches

Check the operation of the "ENGINE STOP" switch and "LIGHTS" switch.

Fittings/Fasteners

Always check the tightness of chassis fittings and fasteners before a ride.

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.

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.

Fuel tank capacity:
3.5 L (0.77 Imp gal, 0.93 US gal)

Mixing oil
Recommended oil:
Yamalube "R"
(Yamalube Racing 2-cycle oil)
Mixing ratio: 48 : 1
If for any reason you should use another type, select from the following list.
Mixing ratio: 50 : 1
* Castrol R30
* Castrol A545
* In Germany brand name is Castrol T.T S but same quality as A545
* Castrol A747

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.

WARNING:

This model is designed for off-road use only. In most instances, it is illegal to ride this model (either day or night) on any public street or highway.

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 a 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:

Recommended oil:

Yamalube "R"
(Yamalube Racing 2-cycle oil)
Mixing ratio: 24 : 1

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

Mixing ratio: 30 : 1

* **Castrol R30**
* **Castrol A545**
* **In Germany brand name is Castrol T.T.S. but same quality as A545**
* **Castrol A747**

1. 0 ~ 100 km (0 ~ 60 mi):
   Avoid operation above 1/4 throttle.
2. 100 ~ 200 km (60 ~ 120 mi):
   Avoid 1/2 throttle operation. Allow the machine to rev freely through the gears but do not use 1/2 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 speeds in excess to 100 km/h (65 mi)

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

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 several minutes.

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 empty fuel tank, pour a cup of SAE 10W30 or 20W40 motor oil in tank, shake the tank to coat the inner surfaces thoroughly and drain off any excess the oil. Reinstall the tank.
3. 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.
4. 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).
5. Lubricate all control cables.
6. Block up the frame to raise both wheels off the ground.
7. Tie a plastic bag over the exhaust pipe outlet to prevent moisture entering.
8. 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.

2 PERIODIC INSPECTIONS AND ADJUSTMENTS

PERIODIC MAINTENANCE INTERVALS AND LUBRICATION INTERVALS 2-1

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PERIODIC MAINTENANC INTERVALS AND LUBRICATION INTERRALS CHART 2-1

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2

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:

Modifiacations 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

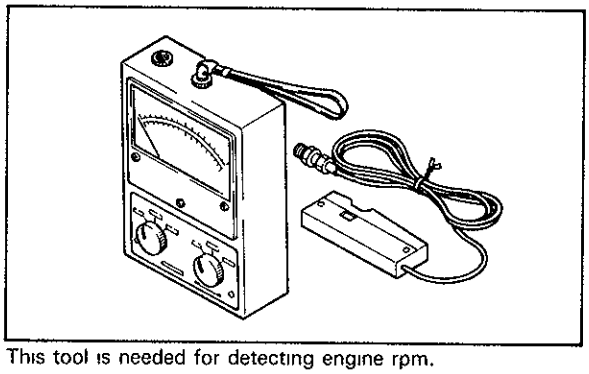
Item	After break-in	Every race	Every 500 km (300 miles)	Every 1,500km (1,000 miles)	As required	Remarks
PISTON Inspect and clean Replace		●			●	Inspect crack Remove carbon
PISTON RINGS Inspect Replace	●	●	●		●	Check ring end gap
PISTON PIN, SMALL END BEARING Inspect Replace				●	●	
CYLINDER HEAD Inspect 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

Item	After break-in	Every race	Every 500km (300 miles)	Every 1,500km (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, free play, alignment Replace	●	●			●	Use SAE30 ~ 50 motor oil Free play: 20 ~ 30 mm (0.8 ~ 1.2)
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	●	●			● ●	SAE 10W30 type SE motor oil
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
CHANGE Lubricate pivot point	●	●				SAE 10W30 motor oil
IGNITION TIMING Inspect and adjust	●				●	

SPECIAL TOOLS

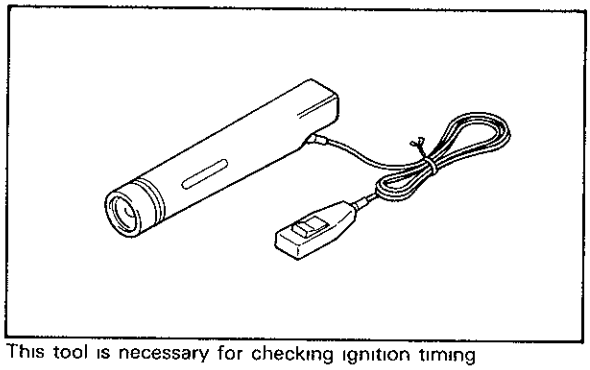
The following special tools are required to perform maintenance, adjustments, and repairs on your machine. These tools can be obtained through your Yamaha dealer.

1. Inductive Tachometer
   P/N 90890-03082



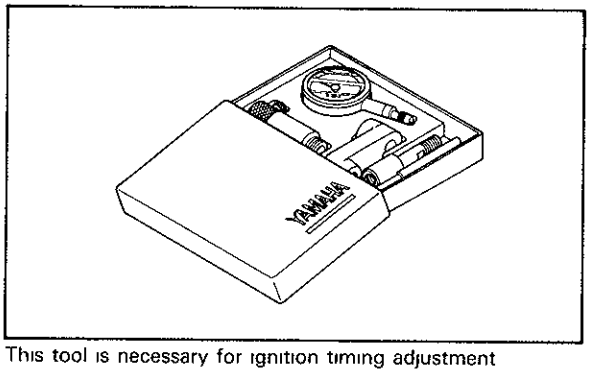
This tool is needed for detecting engine rpm.

2. Inductive Timing Light
   P/N 90890-03109



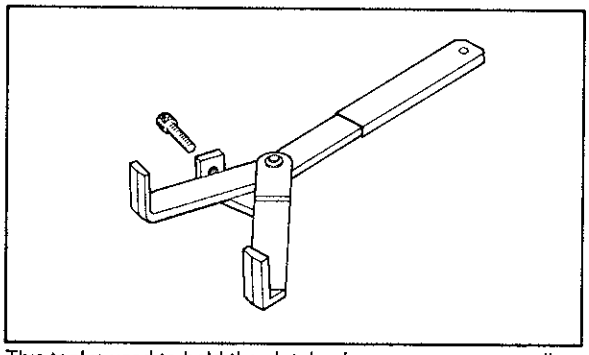
This tool is necessary for checking ignition timing

3. Dial Gauge Set
   P/N 90890-01252



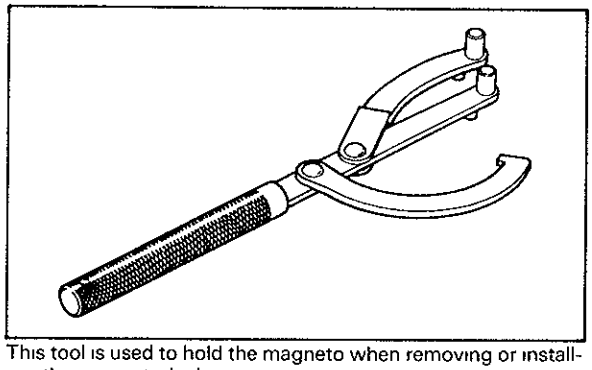
This tool is necessary for ignition timing adjustment

4. Clutch Holding Tool
   P/N 90890-04086



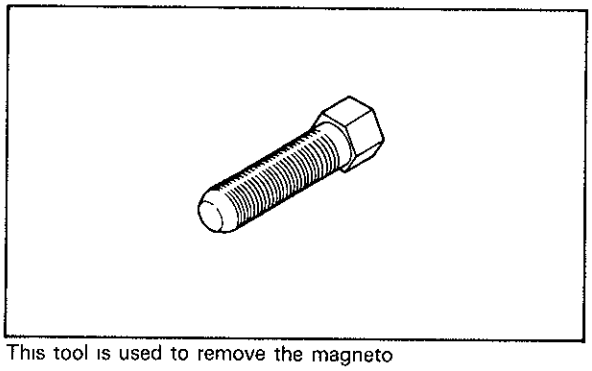
This tool is used to hold the clutch when removing or installing the clutch boss locknut

5. Rotor Holding Tool
   P/N 90890-01235



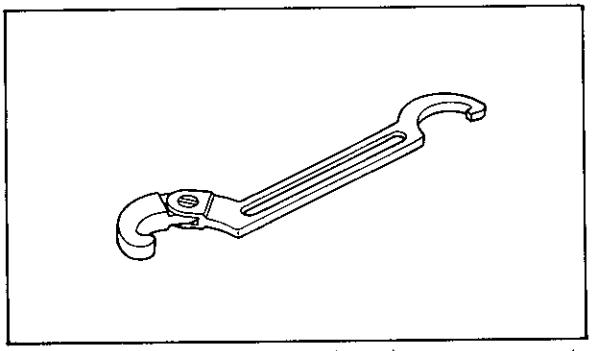
This tool is used to hold the magneto when removing or installing the magneto lockut

6. Rotor Puller
   P/N 90890-01080



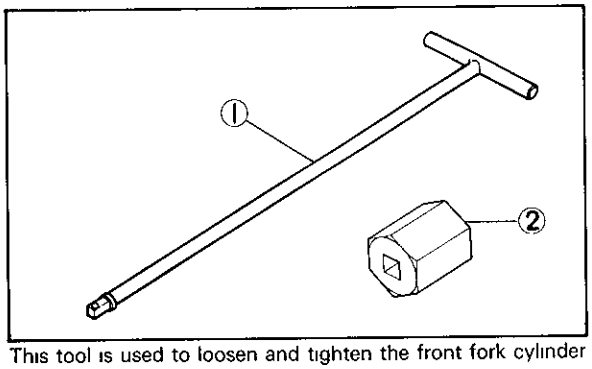
This tool is used to remove the magneto

7. Steering Nut Wrench
P/N 90890-01268



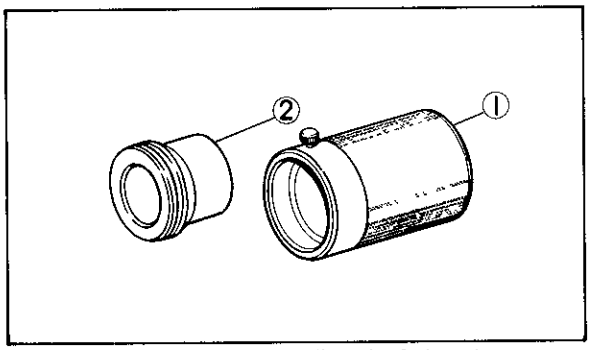
This tool is used to loosen and tighten the steering ring nut

8. T-Handle
P/N 90890-01326 — ①
Damper Rod Holder 22 mm
P/N 90890-01365 — ②



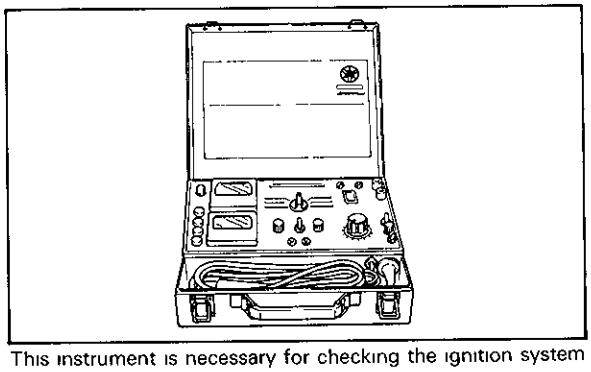
This tool is used to loosen and tighten the front fork cylinder holding bolt

9. Front Fork Seal Driver (weight)
P/N 90890-01367 — ①
Adapter (36 mm)
P/N 90890-01370 — ②



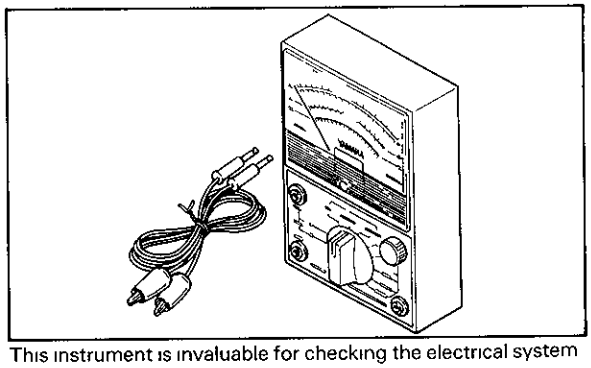
These tools are used when installing the fork seal

10. Electro Tester
P/N 90890-03021



This instrument is necessary for checking the ignition system components

11. Pocket Tester
P/N 90890-03104



This instrument is invaluable for checking the electrical system

MINOR MAINTENANCE AND ADJUSTMENTS

Spark Plug Inspection

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.

You should periodically remove and inspect the spark plug because heat and deposits will cause the spark plug to slowly break down and erode. If electrode erosion becomes excessive, or if carbon and other deposits are excessive, you should replace the spark plug with a proper type plug.

Standard spark plug: BP6EV (NGK)

Before installing the spark plug, measure the electrode gap with a wire thickness gauge; adjust the gap to specification as necessary.

Spark plug gap:
0.7 ~ 0.8 mm (0.028 ~ 0.031 in)

When installing the plug, always clean the gasket surface and use a new gasket. Wipe off any grime from the threads, and torque the spark plug properly.

Spark plug:
20 Nm (2.0 m•kg, 14 ft•lb)

NOTE:

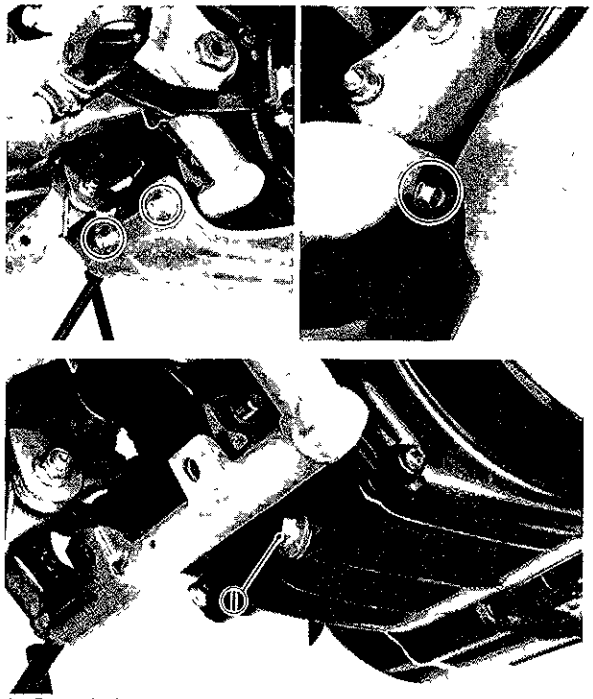
If a torque wrench is not available when you are installing a spark plug, a good estimate of the correct torque is 1/4 to 1/2 turns past finger tight. Have the spark plug torqued to the correct value as soon as possible with a torque wrench.

Transmission Oil Replacement

NOTE:

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

1. Place the machine on a level place, and hold it in an upright position. Warm up the engine for several minutes.
2. With the engine stopped, place a receiver under the engine.
3. Remove the engine guard and oil filler cap. Then, remove the drain bolt, and drain the oil.



1 Drain bolt

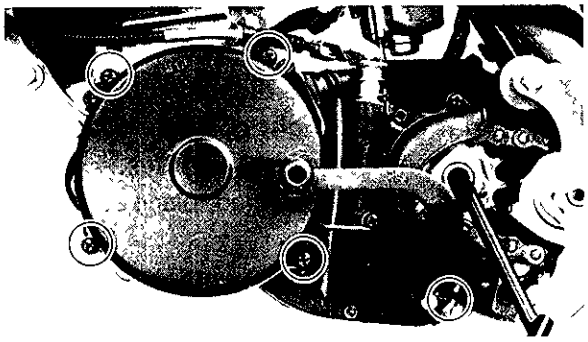
4. When reassembling the engine guard, reverse the above steps.

Drain plug:
20 Nm (2.0 m•kg, 14 ft•lb)

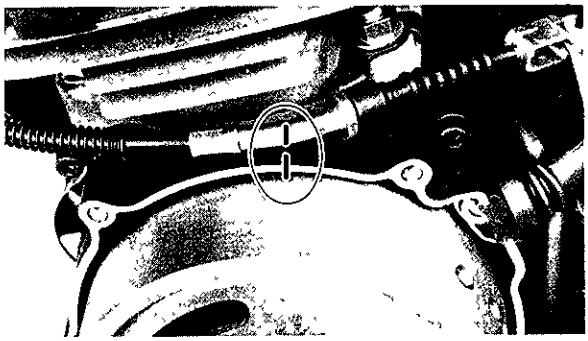
Oil capacity:
Periodic oil change:
0.75 L (0.66 Imp qt, 0.79 US qt)
Total amount:
0.80 L (0.70 Imp qt, 0.85 US qt)
Recommended oil:
SAE 10W30 type SE motor oil

Ignition Timing Check

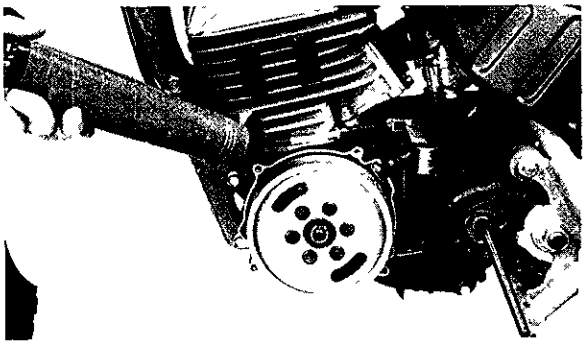
1. Remove the engine guard, and remove the change pedal and crankcase cover (left).



2. Ignition timing is checked with a Timing Light (90890-03109) by observing the position of the mark on the crankcase and mark on the magneto.



3. Connect the Timing Light to the spark plug lead.



4. Start the engine, and keep the engine speed as specified.

NOTE:

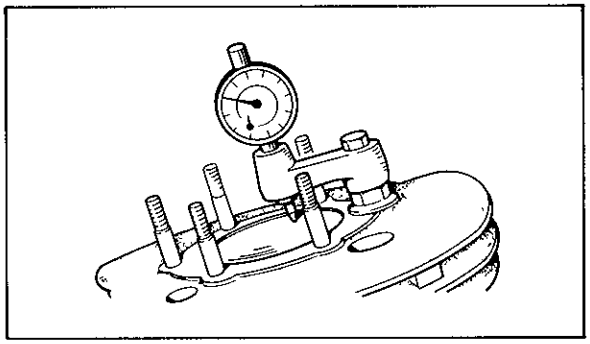
Use a Tachometer (90890-03082) to check the engine speed.

Specified engine speed: 2,500 r/min

5. If not aligned, adjust the ignition timing.

Ignition Timing Adjustment

1. Remove the seat and fuel tank.
2. Remove the muffler assembly.
3. Remove the cylinder head and gasket.
4. Install the Dial Gauge set (90890-01252) to the cylinder.

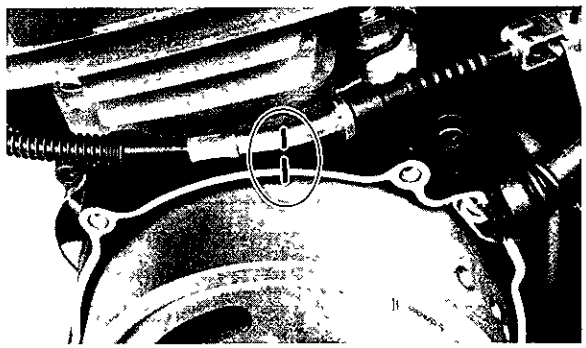


5. Rotate the C.D.I. magneto until piston is at T.D.C. (Top Dead Center). Set the zero on the Dial Gauge face to line up exactly with a dial gauge needle Rotate magneto back and forth to be sure that indicator needle does not go past zero.
6 Slowly turn the magneto clockwise until the Dial Gauge reads specified ignition timing.

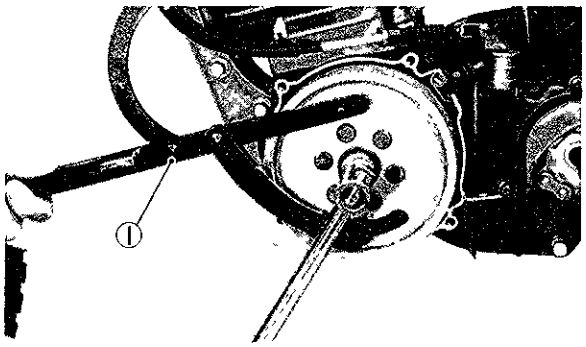
Ignition timing (B.T.D.C.): 2.6 mm (0.10 in)

7. 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.

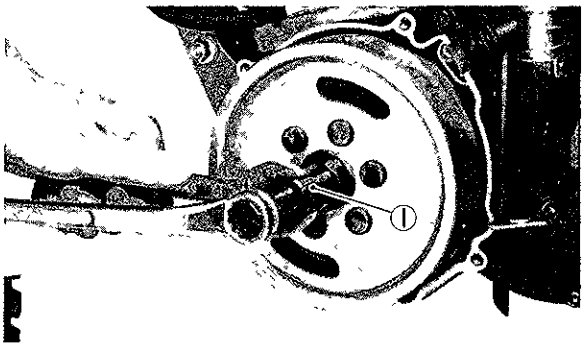


b. Remove the magneto securing nut with the Rotor Holding Tool (90890-01235)



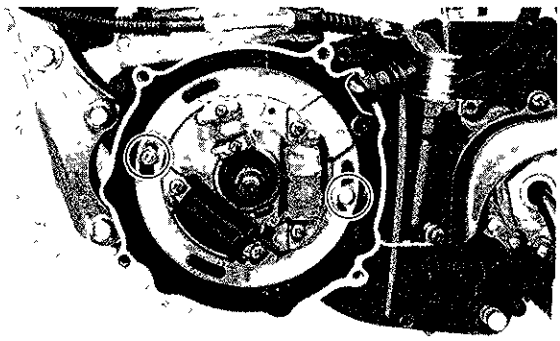
1 Rotor Holding Tool (90890-01235)

c Remove the magneto with the Rotor Puller (90890-01080)



1 Rotor Puller (90890-01080)

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.

Set screw: 8 Nm (0.8 m•kg, 5.8 ft•lb)

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

NOTE:

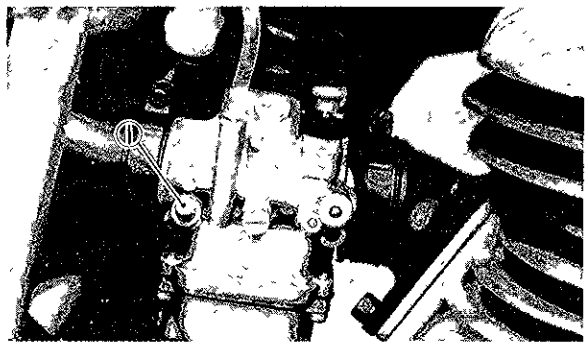
Check the ignition timing Adjust if necessary.

Magneto securing nut: 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, 4.3ft•lb)

Idle Mixture Setting

1 Tighten the air screw lightly, and back it out from its lightly seated position

Standard turned out: 2-1/4 turns out



1 Air screw

Idle Speed Adjustment

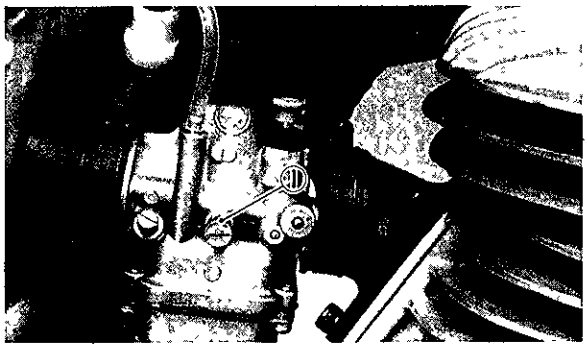
The idle speed should be adjusted to specified revolutions at the throttle stop screw.

NOTE:

Before making the idle speed adjustment, make sure the idle mixture is correctly adjusted.

Standard idle speed: 1,100 ± 50 r/min

1. The engine must be warmed up, before setting the idle speed.
2. Set the engine idle speed by turning the throttle stop screw in (to increase engine speed) or out (to decrease engine speed).



1 Throttle stop screw

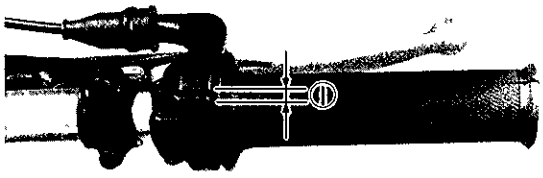
Throttle Cable Adjustment

The throttle cable should be adjusted to specified free play at the throttle grip. Adjustment is accomplished at one of two places either the throttle cable side or carburetor side.

NOTE:

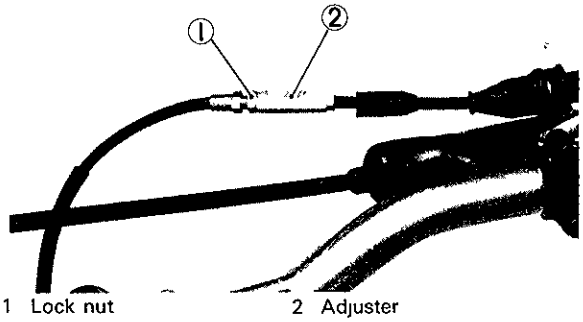
Before making the throttle cable adjustment, make sure the idle speed is correctly adjusted.

Throttle cable free play:
3~5 mm (0.12~0.20 in)

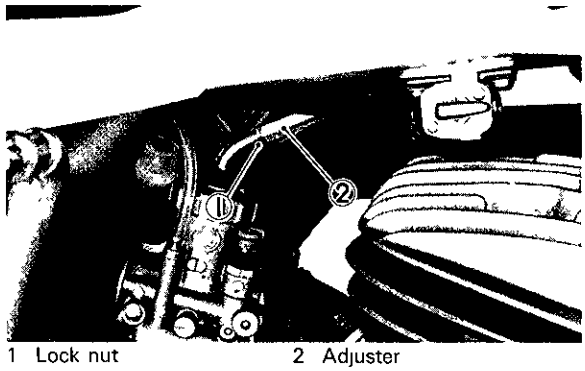


1 Free play

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



1 Lock nut 2 Adjuster

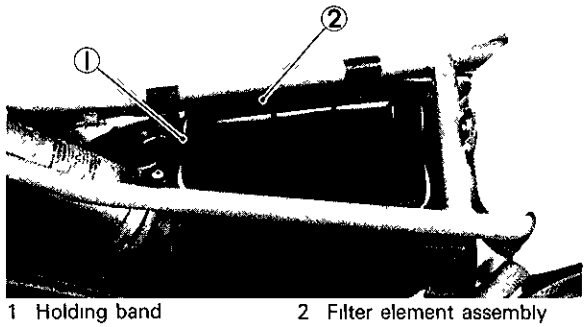


1 Lock nut 2 Adjuster

3. Tighten the lock nut.

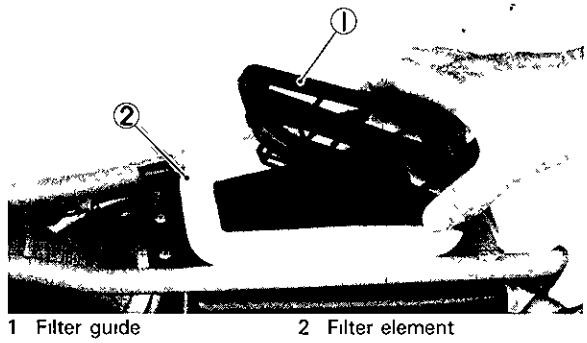
Air Filter Cleaning

1. Remove the seat.
2. Remove the filter holding band, and remove the filter element assembly.



1 Holding band 2 Filter element assembly

3. Remove the filter guide from the filter element.



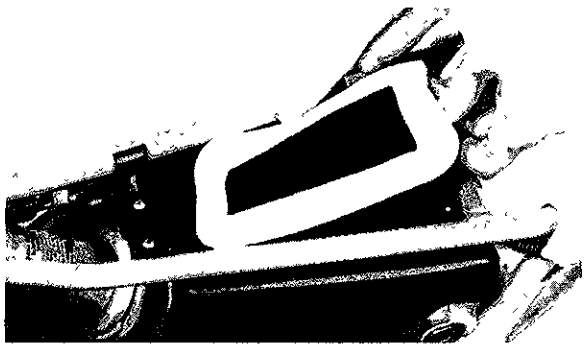
1 Filter guide 2 Filter element

4. Wash the element gently, but thoroughly in solvent. Then, squeeze the solvent out of the element, and allow the element to dry.
5. Pour a small quantity of motor oil onto the element, and work thoroughly into the foam.

NOTE:

In order to function properly, the element must be damp with oil at all times, but not "dripping" with oil.

6. Coat the upper and lower edges of the element with light grease to provide an air-tight-seal.



7. When reassembling the seat, reverse the above steps.

NOTE:

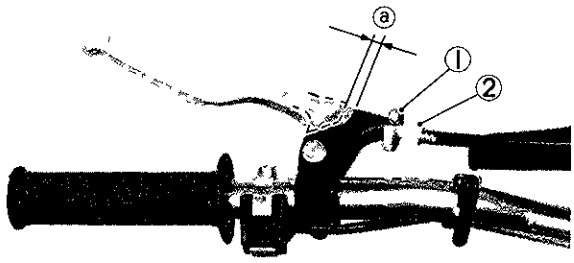
Each time filter element maintenance is performed, check the air inlet to the filter case for obstructions. Check the air cleaner joint rubber to the carburetor and manifold fittings for an air-tight seal. Tighten all fittings thoroughly to avoid the possibility of unfiltered air entering the engine

Clutch Adjustment

This model has two clutch cable length adjusters. The cable length adjusters are used to take up slack from cable stretch and to provide sufficient free play for proper clutch operation under various operation conditions.

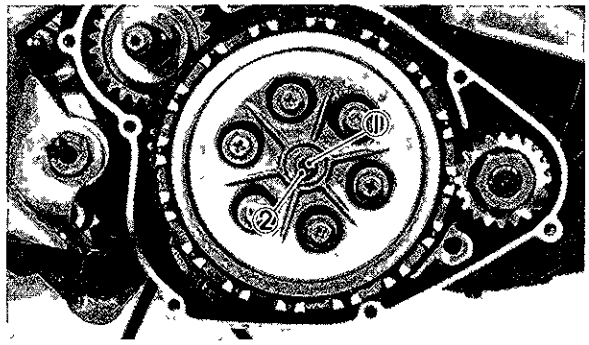
1. Free play adjustment
   The clutch should be adjusted to suit the rider's preference, but free play at the lever pivot side should be 2~3 mm (0.08~0.12 in).

   a. Loosen the lock nut.
   b. Turn the adjuster in or out until adjustment is suitable.
   c. Tighten the lock nut.



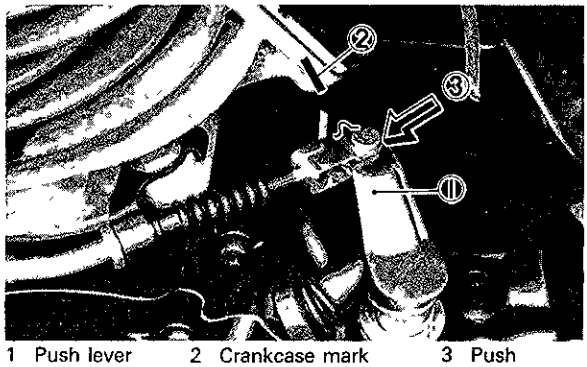
1 Lock nut 2 Adjuster a Free play

2. Mechanism adjustment
   a. Fully loosen the handlebar lever lock nut, and screw in the adjuster until tight.
   b. Remove the kick crank, and drain the transmission oil. Then, remove the crankcase cover (right).
   c. Loosen the clutch mechanism adjuster lock nut.



1. Adjuster 2. Lock nut

   d. Push the push lever toward the front of the engine with your finger until it stops. With the push lever in this position turn the adjuster either in or out until the push lever mark and crankcase match mark are aligned. Tighten the lock nut.



1 Push lever 2 Crankcase mark 3 Push

e. When reassembling the kick crank, reverse the above steps.

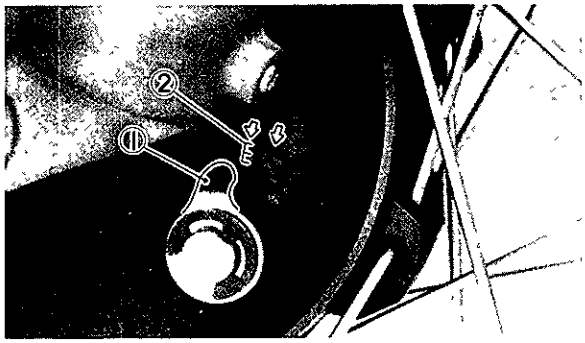
NOTE:

Readjust the clutch lever free play.

Crankcase cover: 10 Nm (1.0 m•kg, 7.2 ft•lb) Kick crank: 59 Nm (5.9 m•kg, 43 ft•lb)

Brake Lining Inspection

To check, see the wear indicator position while pulling the brake lever. If the indicator reaches to the wear limit line, replace the shoes.

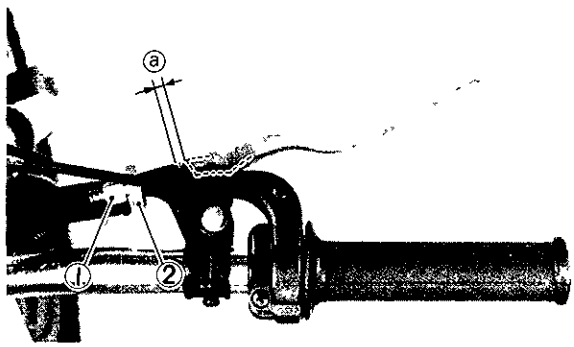


1 Wear indicator 2 Wear limit

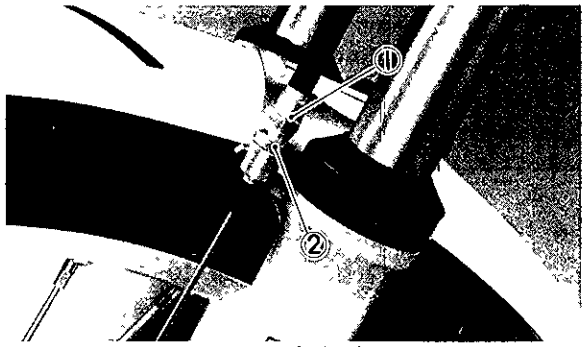
Front Brake Adjustment

The front brake should be adjusted to suit rider preference within a 5 ~ 8 mm (0.2 ~ 0.3 in) free play at the lever pivot side. Adjustment is accomplished at one of two places; either the handlebar lever holder or the front fender

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



1 Adjuster 2 Lock nut a Free play



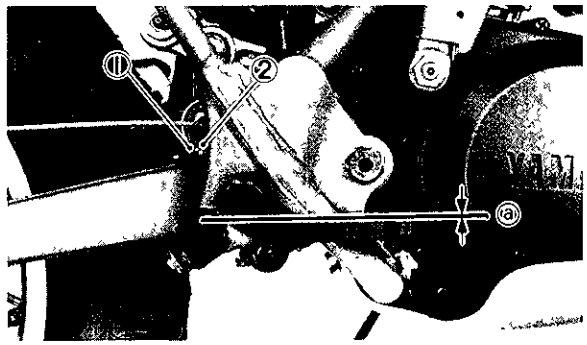
1 Adjuster 2 Lock nut

3. Tighten the lock nut

Rear Brake Pedal Position Adjustment

The rear brake pedal position should be adjusted so that its top end is flush with the top of the footrest.

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



1 Adjuster 2 Lock nut a Flush

3. Tighten the lock nut.

WARNING:

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

Rear Brake Adjustment

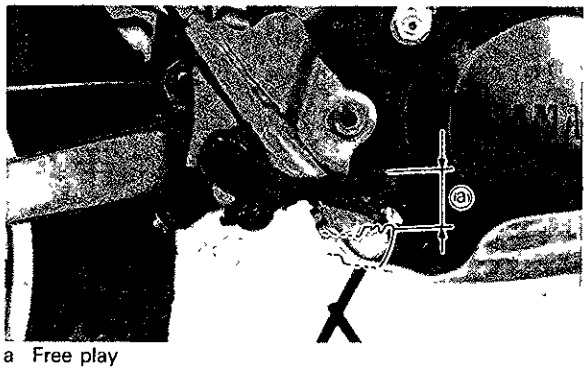
The rear brake should be to suit rider's preference within 10 ~ 15 mm (0.4 ~ 0.6 in) free play at the brake pedal end.

1. To adjust, turn the adjuster on the brake rod clockwise to reduce play; turn the adjuster counterclockwise to uncrease play.

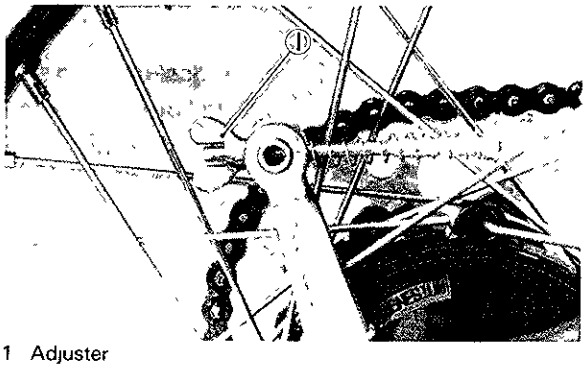
WARNING:

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.**



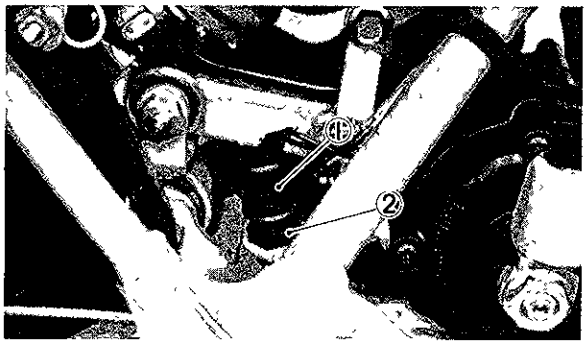
a Free play



1 Adjuster

Brake Light Switch Adjustment

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



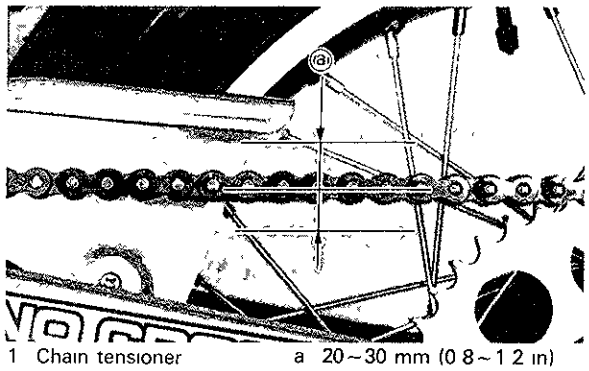
1 Main body 2 Adjusting nut

Drive Chain Slack Check

NOTE

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

To check the chain slack the machine must stand vertically with its both wheels on the ground and without rider on it. Check the slack at the position shown in the illustration. The normal vertical deflection is approximately 20 ~ 30 mm (0.8 ~ 1.2 in). If the deflection exceeds 30 mm (1 2 in) adjust the chain slack.



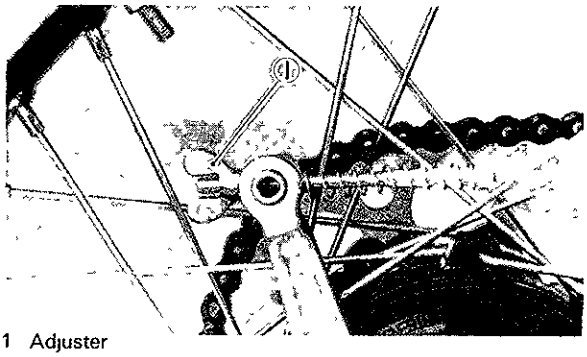
1 Chain tensioner a 20 ~ 30 mm (0 8 ~ 1 2 in)

Drive Chain Slack Adjustment

CAUTION:

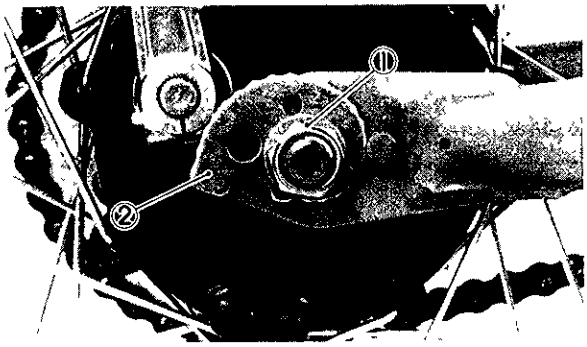
Excessive chain slack will overload the engine and other vital parts; keep the tension within the specified limits.

1. Loosen the rear brake adjuster.



1 Adjuster

2 Loosen the rear wheel axle nut.
3. Turn the chain puller both left and right, until axle is situated in same puller slot position on each side.



1 Axle nut 2 Chain puller

4. Tighten the rear axle nut.

Axle nut:
70 Nm (7.0 m•kg, 50 ft•lb)

5. Adjust the free play in the brake pedal.

WARNING:

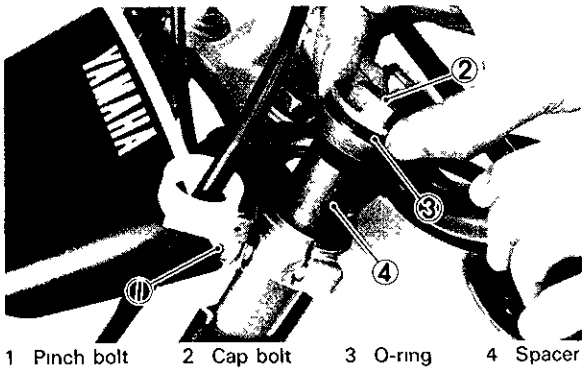
Check the operation of the brake light after adjusting the rear brake.

Front Fork Oil Change

WARNING:

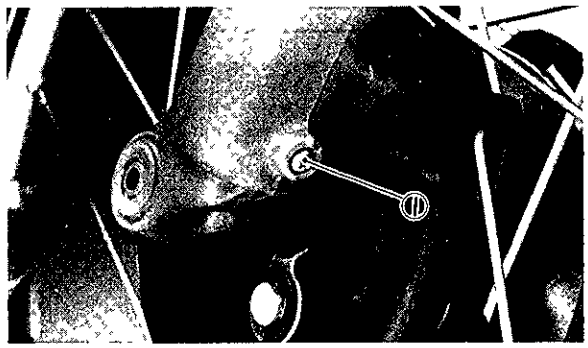
1. **Fork oil leakage can cause loss of stability and safe handling. Have any problem corrected before operating the machine.**
2. **Securely support the machine so there is no danger of it falling over.**

1. Loosen the front fork pinch bolt and remove the cap bolt and spacer from the inner fork tube.



1 Pinch bolt 2 Cap bolt 3 O-ring 4 Spacer

2. Place an open container under each drain hole. Remove the drain screw from each outer tube.



1 Drain screw

3. After most of the oil has drained, slowly pump the forks up and down to remove any remaining oil.
4. Inspect the drain screw gasket. Replace if damaged. Reinstall the drain screws.
5. Pour the specified amount of oil into each the fork inner tube.

Front fork oil capacity (each fork):
299 cm^3 (10.5 Imp oz, 10.1 US oz)
Recommended oil:
SAE 10W30 type SE motor oil

6. After filling, slowly pump the forks up and down to distribute the oil.
7. Inspect the O-ring on the cap bolt. Replace if damaged.
8. Reinstall the spacer and cap bolt and tighten the pinch bolt.

Cap bolt:
15 Nm (1.5 m•kg, 11 ft•lb)
Pinch bolt (Front fork)
20 Nm (2.0 m•kg, 14 ft•lb)

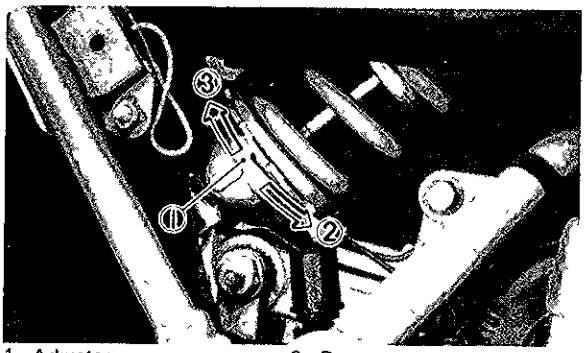
Rear Shock Absorber Adjustment

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

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

NOTE:

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



1 Adjuster
2 Decrease spring preload
3 Increase spring preload

CAUTION:

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

Steering Head Adjustment

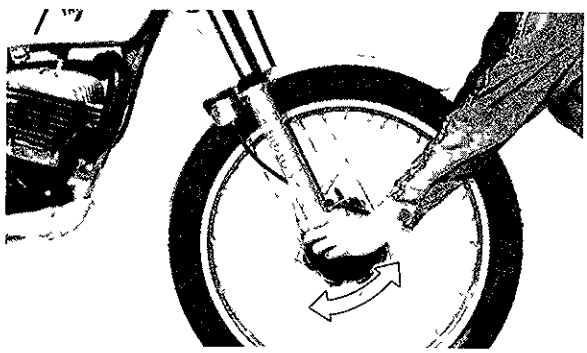
Periodically inspect the condition of the steering. Worn out or loose steering bearings may be dangerous.

1. Place a block under the engine to raise the front wheel off the ground.

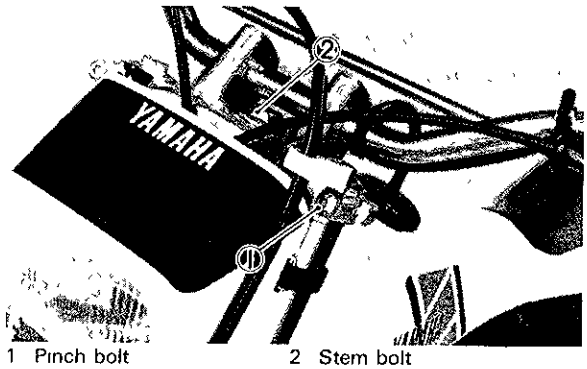
WARNING:

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

2. Hold the lower end of the front forks and try to move them forward and backward. If any free play can be felt, adjust the following steps:

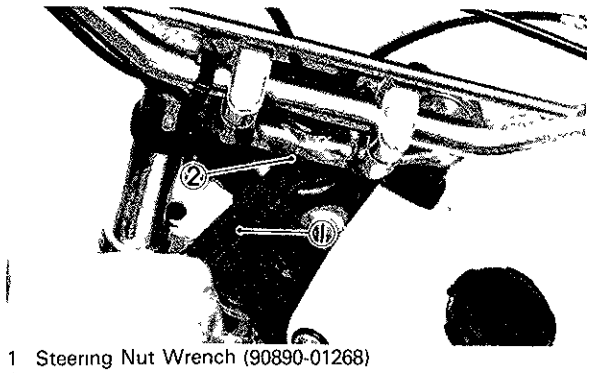


a. Loosen the front fork pinch bolts and handle crown stem bolt.



1 Pinch bolt
2 Stem bolt

b. Using the Steering Nut Wrench (90890-01268) to loosen the steering fitting nut.



1 Steering Nut Wrench (90890-01268)
2 Steering fitting nut

c. Tighten the steering fitting nut until the steering head is tight, but does not bind when the forks are turned.

d Retighten the stem bolt and pinch bolts. Torque the bolts to specification.

Stem bolt:
42 Nm (4.2 m•kg, 30 ft•lb)
Pinch bolt:
20 Nm (2 0 m•kg, 14 ft•lb)

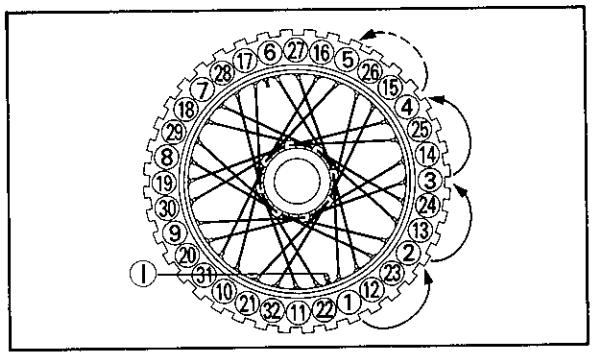
3. Recheck steering head adjustment to make sure there is no binding when the forks are moved from lock to lock.

Spoke Retightening

Be sure to retighten the spokes before and after break-in. After a practice or race, check the spokes for looseness.

1. Retighten at an interval of three spokes as shown below.
2. The retightening will be completed at No. 32 after three turns of the wheel. If there are any spokes short of torque, repeat the same procedure.

Nipple: 6 Nm (0.6 m•kg, 4.3 ft•lb)



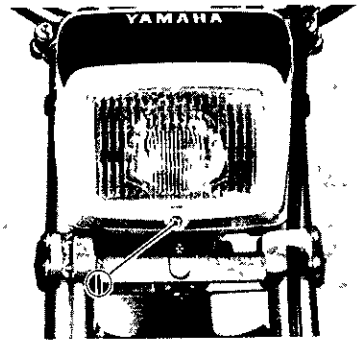
1 Valve

Headlight Beam Adjustment

Vertical adjustment:

To raise the beam, turn the adjusting screw clockwise.

To lower the beam, turn the screw counter-clockwise.



1 Vertical adjusting screw

3 ENGINE INSPECTION AND REPAIR

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REASSEMBLY 3-17

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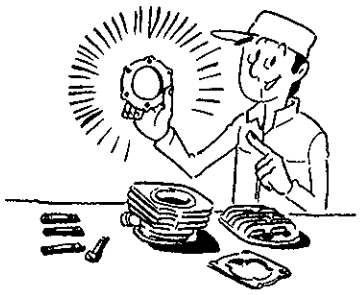
3

ENGINE INSPECTION AND REPAIR

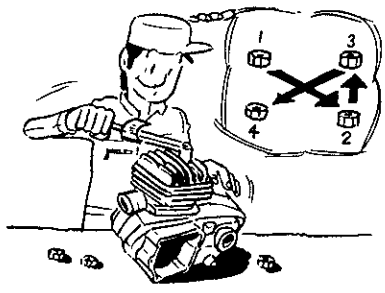
PREPARATION FOR SERVICE

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.

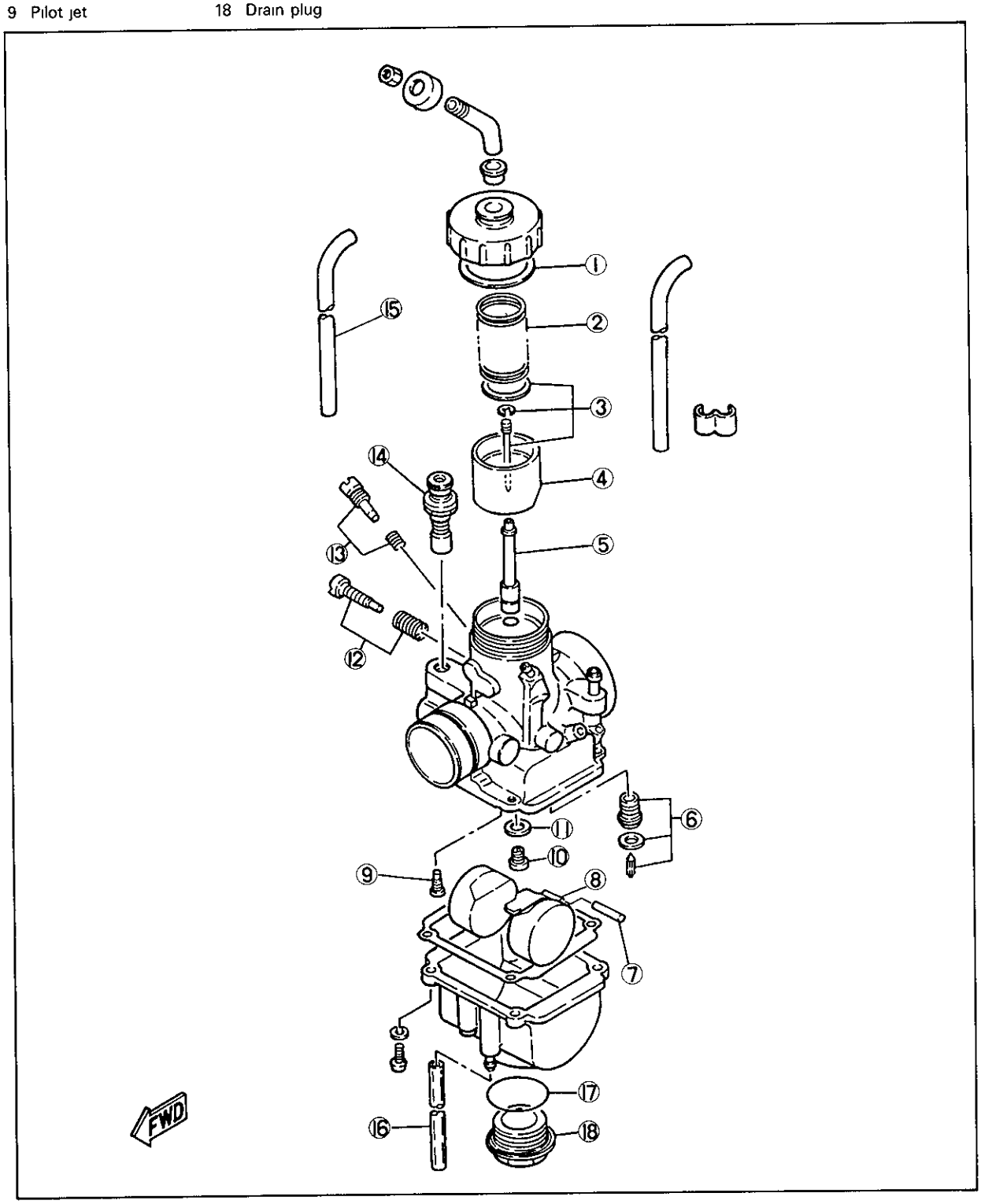






CARBURETOR

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

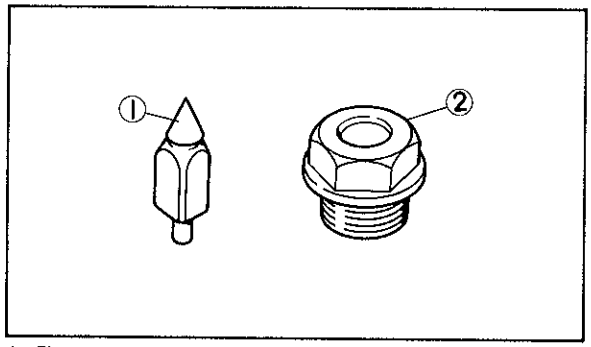


Removal

1. Turn the fuel cock lever to the OFF.
2. Disconnect the fuel pipe.
3. Loosen the manifold clamps, and remove the carburetor assembly.

Inspection

1. Examine carburetor body and fuel passages. If contaminated, wash carburetor in petroleum-based solvent. Do not use caustic carburetor cleaning solutions. Blow out all passages and jets with compressed air.
2. Examine condition of floats. If floats are leaking or damaged, they should be replaced.
3. Inspect inlet needle valve and seat for wear or contamination. Replace these components as a set.

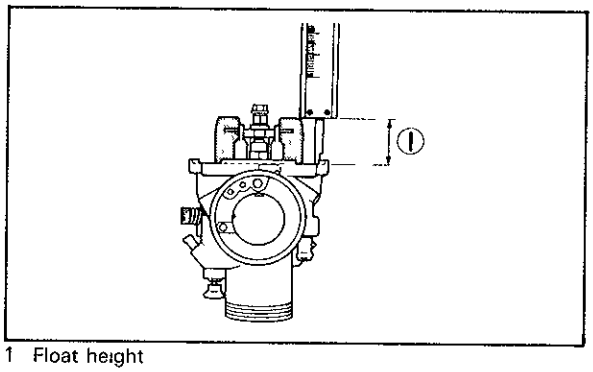


1 Float needle 2 Valve seat

Adjustment

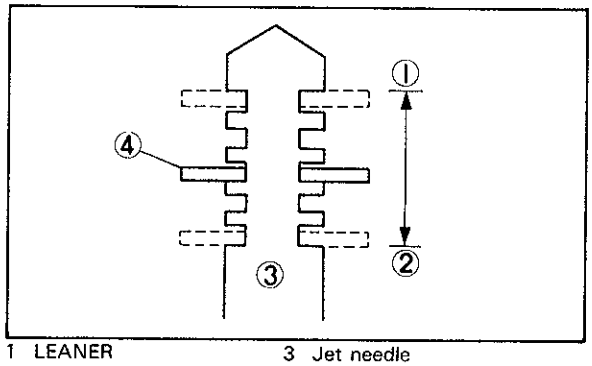
1. Float height
   Hold the carburetor in an upside down position. While holding the floats so the tang is just touching the float needle, measure the distance from the top of the float to the float bowl gasket surface. Bend the tang on the float arm if adjustment is necessary.
   BOTH FLOATS MUST BE AT THE SAME HEIGHT.
   If the floats are too high a lean air/fuel mixture will occur. If too low, a rich mixture will result.

Float height:
22.0 ± 1.0 mm (0.87 ± 0.04 in)



1 Float height

2 Jet needle
The mid-range air/fuel supply is affected by the position of the needle in the needle jet If it is necessary to alter the midrange air/fuel mixture characteristics of the machine, the jet needle position may be changed. Move the jet needle up for a leaner condition or toward the bottom position for a richer condition.

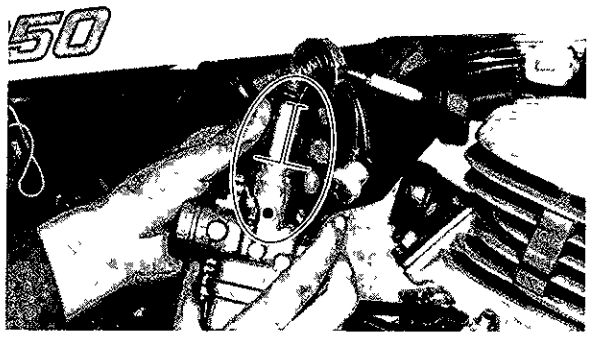


1 LEANER 3 Jet needle
2 RICHER 4 Clip

Reassembly

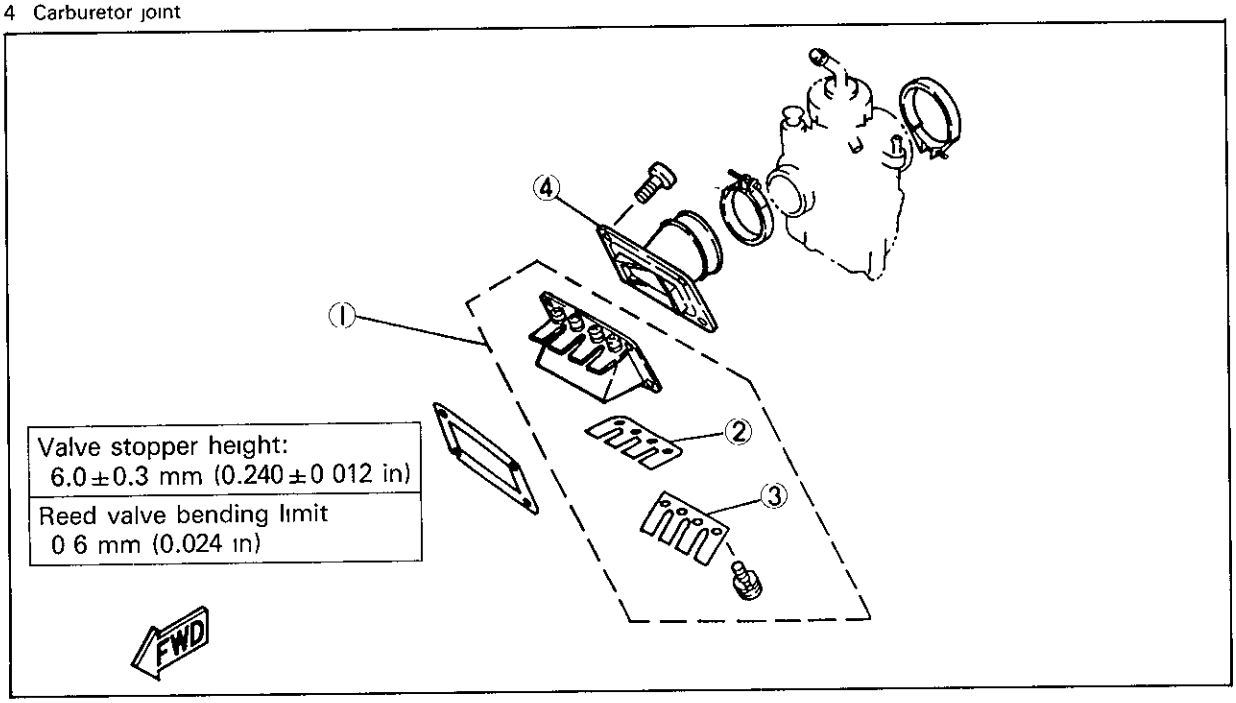
When installing the carburetor, reverse the removal procedure taking the following step:

1. When installing the throttle valve, align the projection on the mixing chamber body with the groove on the throttle valve.



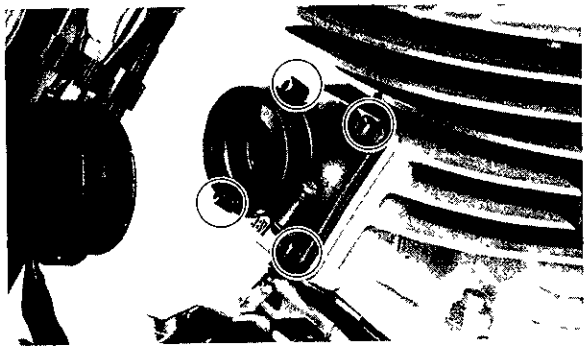
REED VALVE

1 Reed valve assembly
2 Reed valve
3 Reed valve stopper
4 Carburetor joint



Removal

1. Remove the carburetor assembly.
2. Remove the reed valve assembly from the cylinder.

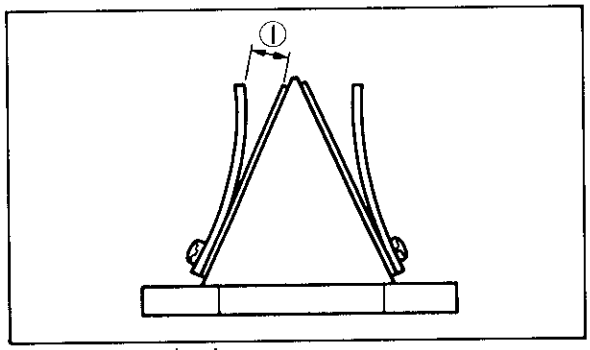


Inspection

1. Inspect rubber intake manifold for signs of weathering, checking or other deterioration.
2. Inspect reed petals for signs of fatigue cracks. Reed petals should fit flush or nearly flush against neoprene seats. If in doubt as to sealing ability, apply suction to carburetor side of assembly. Leakage should be slight to moderate.
3. Check valve stopper height. If beyond tolerance, adjust or replace.

Valve stopper height.
6.0±0.3 mm (0.240±0.012 in)

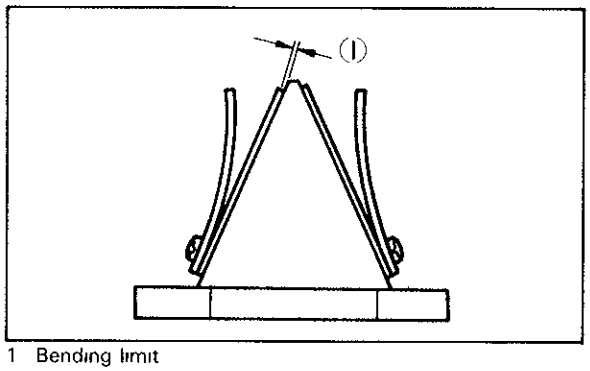
If it is 0.5 mm (0.02 in) more or less than specified, replace the valve stopper.



1 Valve stopper height

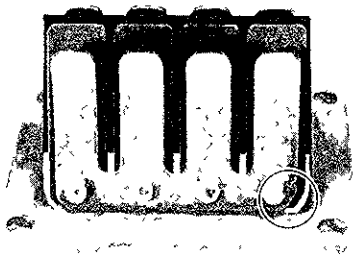
4. Check reed valve for bending. If beyond tolerance, replace reed valve.

Reed valve bending limit:
0.6 mm (0.024 in)



1 Bending limit

5. During reassembly, note the cut in the lower corner of the reed and stopper plate. Use as aid to direction of reed installation.



Reassembly

When installing the reed valve, reverse the removal procedure taking following steps:

1. Install the reed valve. Torque the bolts to specification

NOTE:

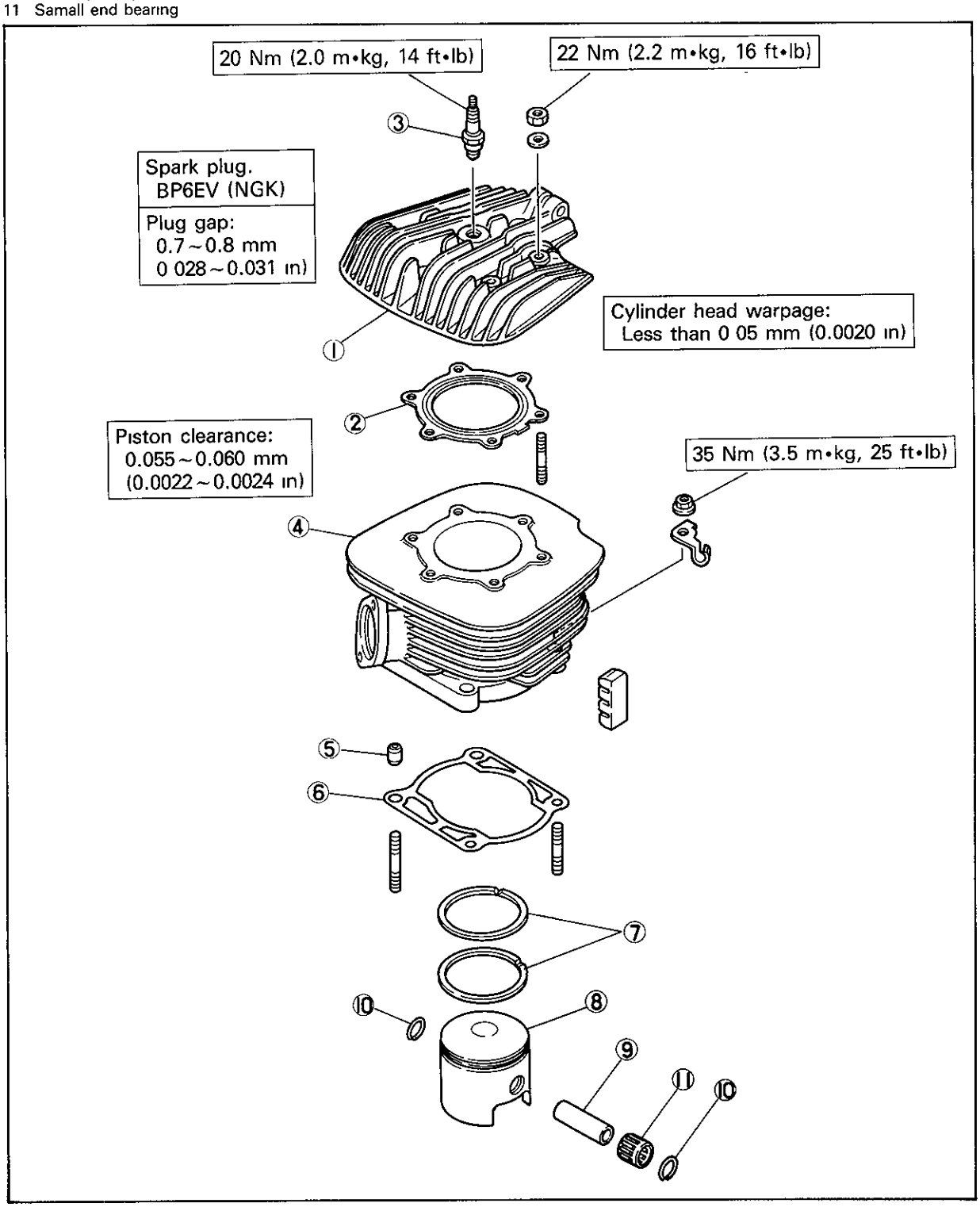
- Always use new gasket.
- The carburetor joint should be installed so that the cut in the joint is at top.

Reed valve:
11 Nm (1.1 m•kg, 8.0 ft•lb)



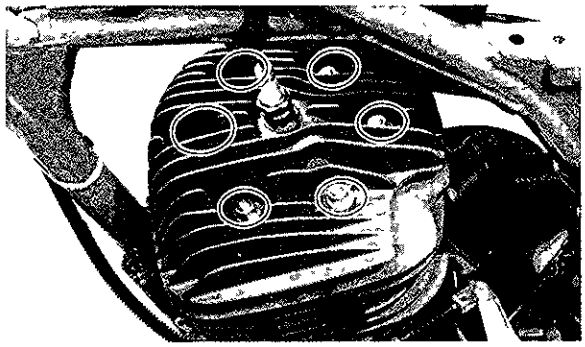
CYLINDER HEAD/CYLINDER/PISTON

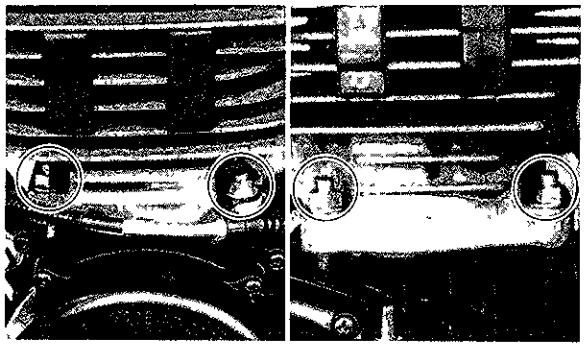
1 Cylinder head
2 Cylinder head gasket
3 Spark plug
4 Cylinder
5 Dowel pin
6 Cylinder gasket
7 Piston ring set
8 Piston
9 Piston pin
10 Piston pin clip
11 Samall end bearing



Removal

1. Remove the muffler assembly.
2. Remove the carburetor assembly.
3. Disconnect the spark plug lead.
4. Remove the cylinder head and cylinder.

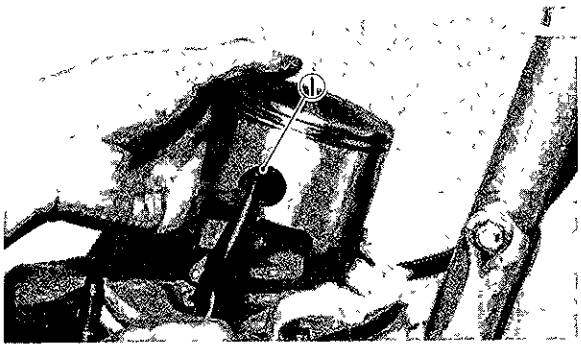




5. Remove the piston pin clip from the piston.

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.

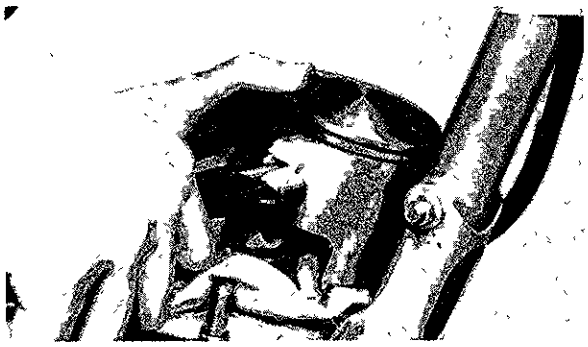


1 Piston pin clip

6. Push the piston pin from the opposite side. Then, pull out the piston pin, and remove the piston.

CAUTION:

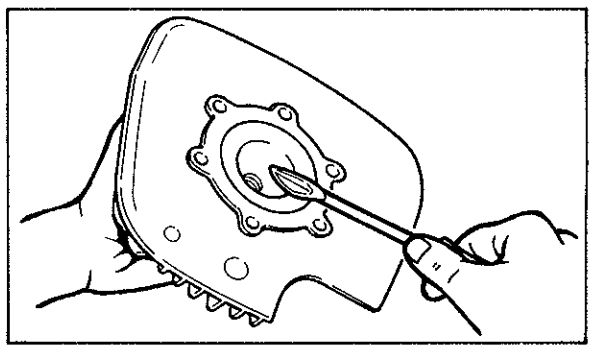
Do not use a hammer to drive the piston pin out.



7. Remove the piston ring from the piston.

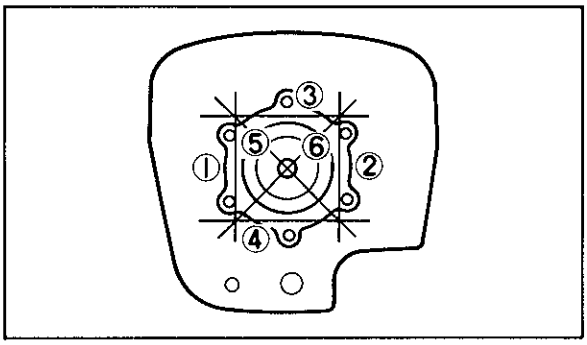
Inspection

1. Muffler
   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 compressd air. Heavy wire, such as a coat hanger, may be inserted to break loose deposits.
2. Cylinder head
   a. Using a rounded scraper, remove carbon deposits from combustion chamber. Take care to avoid damaging spark plug threads. Do not use a sharp instrument. Avoid scratching the aluminum

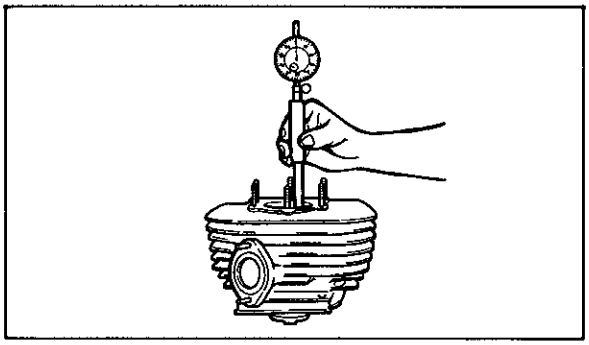


b. Check the cylinder head warpage with a straight edge as shown. The warpage should not exceed the specified limit, it necessary resurface. If the warpage exceeds allowable limit, the cylinder head should be replaced with a new one.

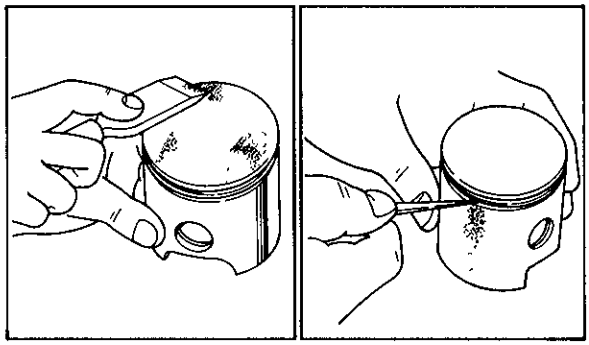
Cylinder head warpage:
Less than 0.05 mm (0.0020 in)



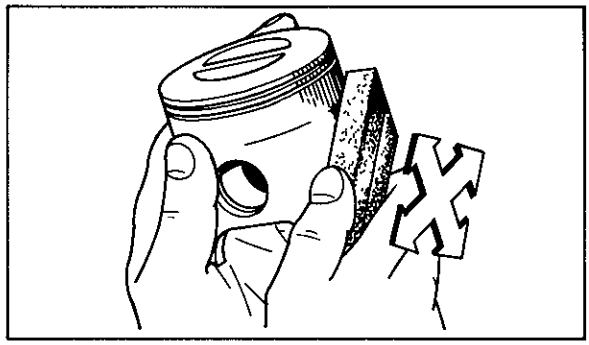
3. Cylinder
   a. Using a rounded scarper, remove carbon deposits from exhaust port.
   b. Check cylinder bore. Using a cylinder hone, remove any scoring. Hone lightly, using smooth stones. Hone no more than required to avoid excess piston clearance.
   c. Using a cylinder gauge set to standard bore size, measure the cylinder. Measuring at six points; at top, center, and from bottom of skirts, in line with the piston pin and at right angle to pin. Compare minimum and maximum measurements. If over tolerance, and not correctable by honing, re-bore to next over-size.



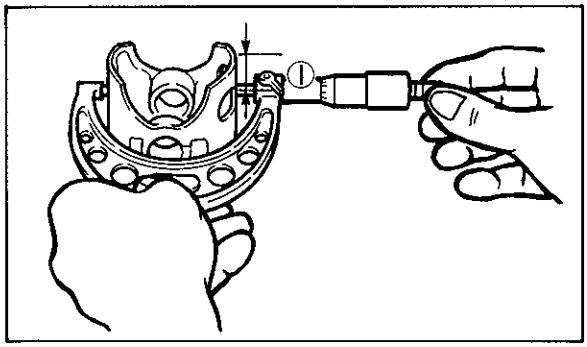
4. Piston
   a. Using a rounded scraper, remove carbon deposits from piston crown.
   b. Break a used pistion ring in two. File end square. De-burr edges to avoid scratching ring groove and clean carbon deposits from ring grooves.



   c. Using 400 ~ 600 grit wet sandpaper, lightly sand score marks and lacquer deposits from sides of piston. Sand in crisscross pattern. Do not sand excessively.



   d. Using an outside micrometer, measure piston diameter. The piston is camground and tapered. The only measuring point is at right-angles to the piston pin holes about 10 mm (0.4 in) from bottom of piston. Compare piston diameter to cylinder bore measurements.



1 10 mm (0.39 in)

Standard piston diameter:
79.94 ~ 80.02 mm (3.150 ~ 3.151 in)

e. Piston clearance

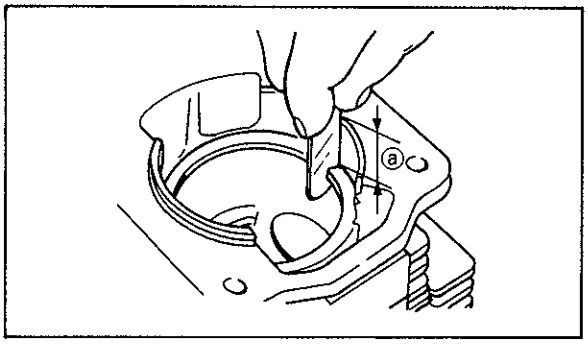
Piston clearnace =
Minimum cylinder dia − Maximum piston dia.

If beyond tolerance, replace the piston and cylinder as a set.

Piston clearance:
0.055 ~ 0.060 mm
(0.0022 ~ 0.0024 in)

5. Piston rings
   a. Insert each ring into cylinder. Push down approximately 20 mm (0.8 in) using piston crown to maintain right-angle to bore. Measure installed end gap. If beyond tolerance, replace set.

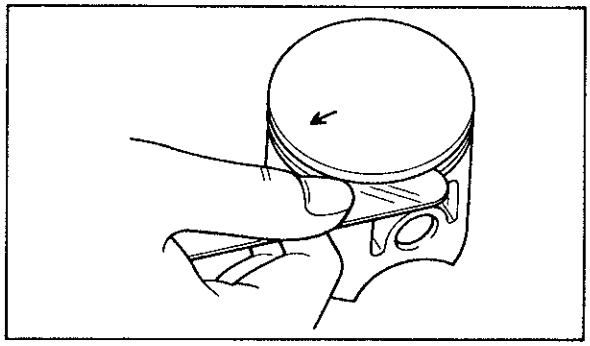
	Min.	Max
Top ring end gap, Installed	0.30 mm (0.012 in)	0.45 mm (0.018 in)
2nd ring end gap, Installed	0.30 mm (0.012 in)	0 45 mm (0.018 in)



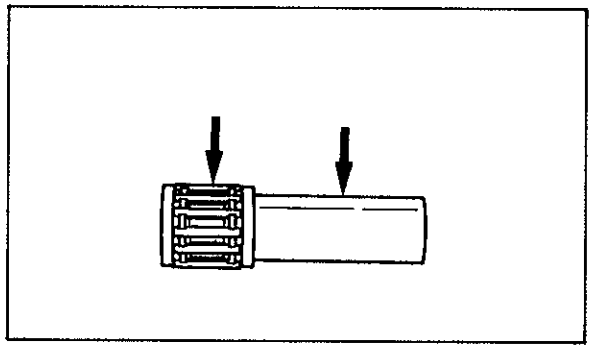
a 20 mm (0 8 in)

   b. With rings installed in grooves, insert feeler gauge between ring edge and groove. If beyond tolerance, replace ring and/or piston as required.

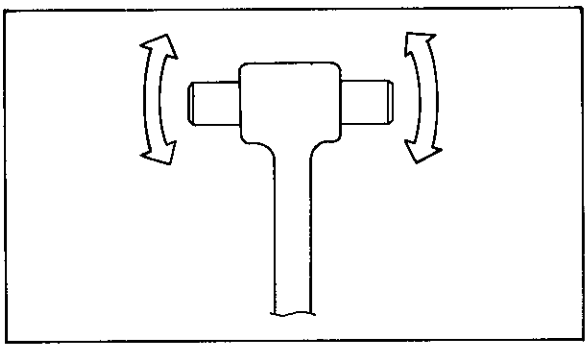
	Min.	Max.
Top ring side clearance	0 04 mm (0.0016 in)	0.08 mm (0.0032 in)
2nd ring side clearance	0.03 mm (0 0012 in)	0 07 mm (0.0028 in)



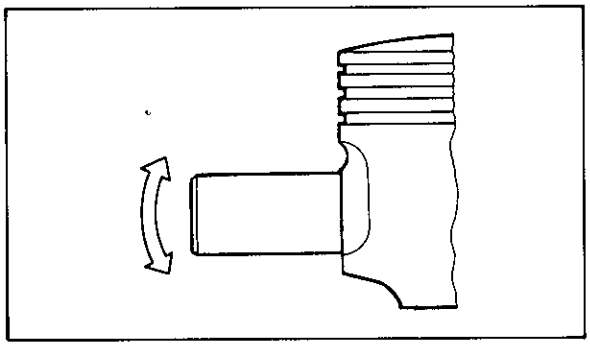
6. Piston pin and bearing
   a. Check the pin for signs of wear. If any wear is evident, replace pin and bearing.
   b. Check the pin and bearing for signs of heat discoloration. If excessive (heavily blued), replace both.
   c. Check the bearing cage for excessive wear. Check the rollers for signs of flat spots. If found, replace pin and bearing.



d. Apply a light film of oil to pin. Install the small end bearing and piston pin in connecting rod small end. Check for play. There should be no noticeable vertical play. If play exists, check connecting rod small end for wear. Replace pin and connecting rod as required.



e. The piston pin should have no noticeable free play in position. If the piston pin is loose, replace the pin and/or piston.



f. Mount a dial gauge at right angles to the connecting rod small end and measure axial play. (Push the bottom of the rod to one side then rock the top from side to side.)

	Nominal	Limit
Connecting rod axial play	0.40~1.0 mm (0.016~0.039 in)	2.0 mm (0.08 in)

g. Remove the dial gauge and slide the connecting rod to one side. Insert a feeler gauge between the side of the connecting rod big end and the crank wheel. Measure clearance.

Connecting rod/crank side clearance:
0.25~0.75 mm (0.010~0.030 in)

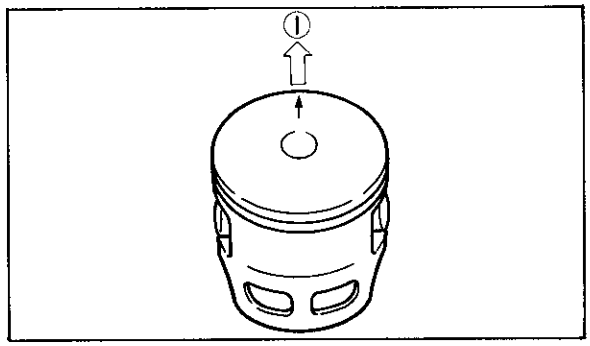
Reassembly

When installing the muffler assembly, reverse the removal procedure taking following steps:

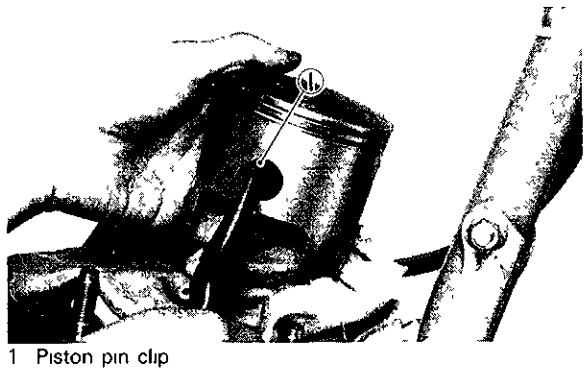
1. Fit the piston onto the connecting rod, and push in the piston pin into the piston. Then, install the piston pin clip.

NOTE:

1. The arrow on the piston must point to the front of the engine.
2. Before installing the piston pin clip, cover the crankcase with a clean towel or rag so you will not accidentally drop the pin clip and material into the crankcase.
3. Always use new piston pin clip.



1 Front



1 Piston pin clip

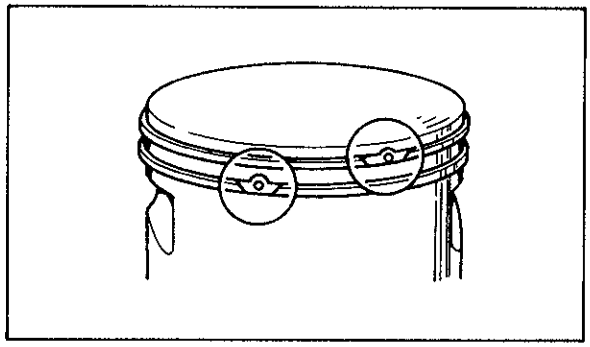
2. Install the piston rings to the piston.

NOTE:

1. Be sure to check the manufacture's marks or numbers stamped on the rings are on the top side of the rings.
2. Before installing the cylinder, apply a liberal coating of 2-stroke engine oil to the piston rings, piston skirt areas, piston pin and connecting rod big end.

CAUTION:

Make sure the ends of the piston ring are correctly positioned.



3. Install the cylinder and cylinder head. Torque the nuts to specification.

NOTE:

The projected portion on the cylinder head gasket must point to the front of the engine.

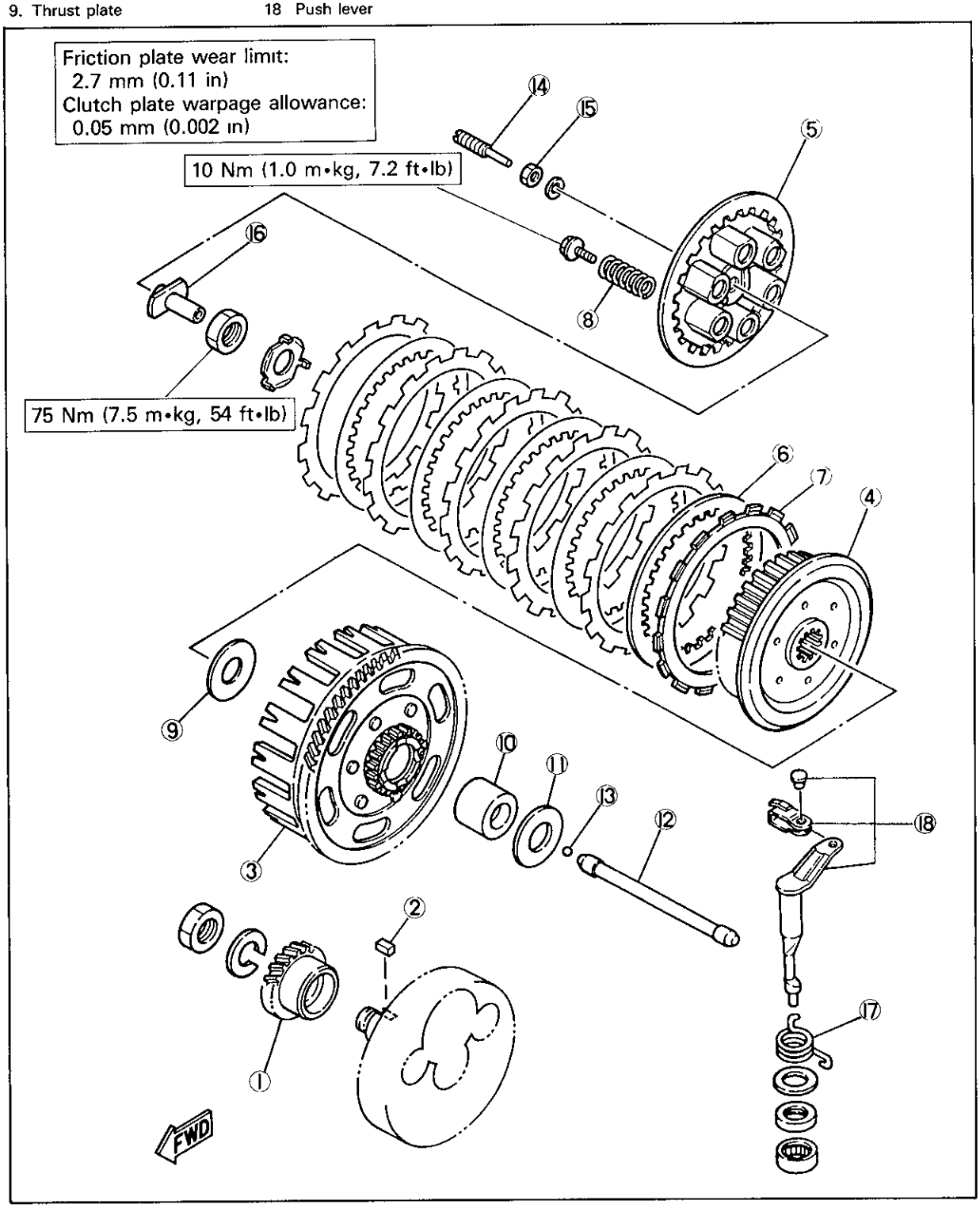
CAUTION:

Always use new gaskets.

Cylinder:
35 Nm (3.5 m•kg, 25 ft•lb)
Cylinder head:
22 Nm (2.2 m•kg, 16 ft•lb)

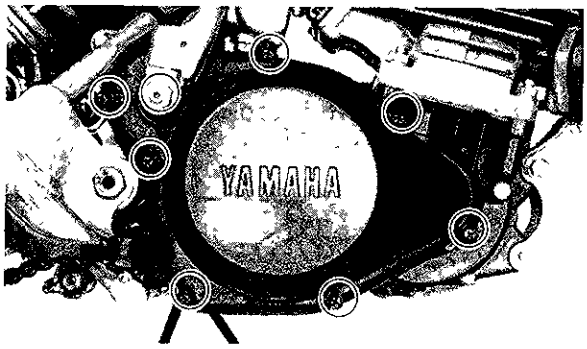
CLUTCH/PRIMARY DRIVE GEAR

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



Removal

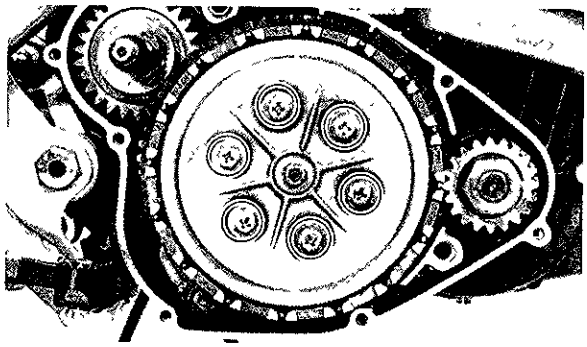
1. Remove the engine guard, kick crank and crankcase cover (right).



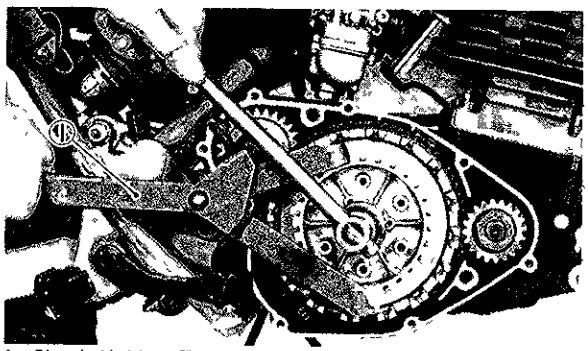
2 Remove the clutch pressure plate, and remove the push rod 1.

NOTE:

When removing the clutch spring screws, loosen each screw in several stages working in a crisscross pattern to avoid any unnecessary warpage. Note the condition of each piece as it is removed and its location within the assembly.

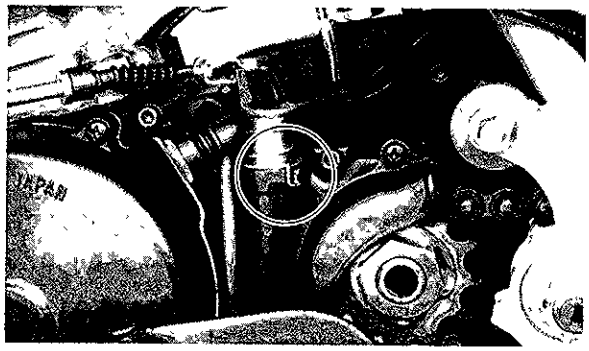


3. Remove the friction plates and clutch plates, and remove the ball and push rod 2.
4. Straighten the lock washer tab. Use Clutch Holding Tool (90890-04086) to hold the clutch boss, and remove the lock nut and lock washer.



1. Clutch Holding Tool (90890-04086)

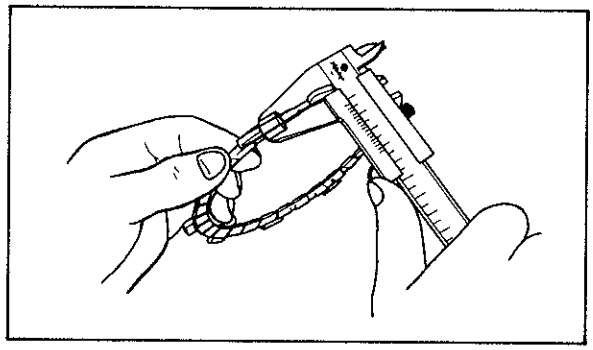
5. Remove the clutch boss, thrust plates and primary driven gear.
6. Pull out the clutch push lever complete.



Inspection

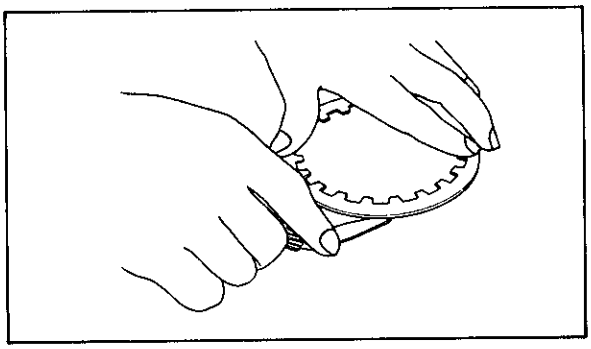
1. Measure the friction plates at three exceeds tolerance, replace.

	New	Wear Limit
Friction plate thickness	2.9~3.1 mm (0.11~0.12 in)	2.7 mm (0.11 in)



2. Check the friction plates for signs of warpage and heat damage. Replace as required.
3. Check each clutch plate for signs of heat damage and warpage. Place on surface plate (plate glass is acceptable) and use feeler gauge as illustrated. If warpage exceeds tolerance, replace.

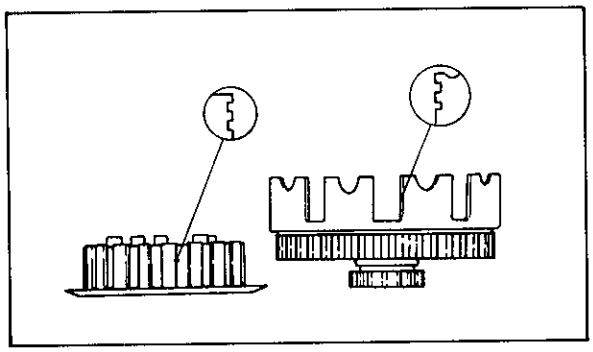
Clutch plate warpage allowance:
0.05 mm (0.002 in) Maximum



4. Check dogs on driven gear (clutch housing). Look for cranks and signs of galling on edges. If moderate, deburr. If severe, replace.
5. Check splines on clutch boss for signs of galling. If moderate, deburr. If servere, replace.

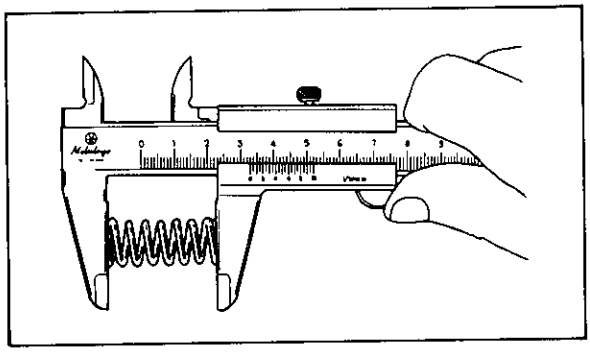
NOTE:

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



6. Measure each clutch spring. If beyond tolerance replace.

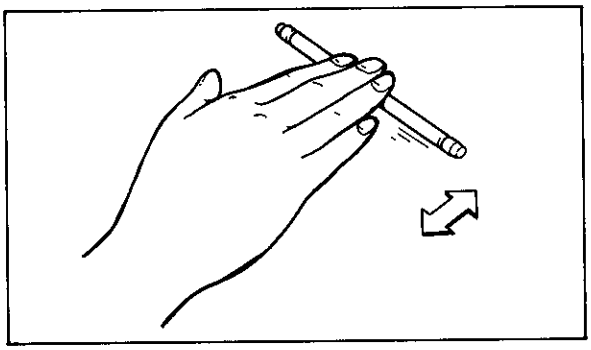
	New	Min.
Clutch spring free length	31.9 mm (1 26 in)	29.9 mm (1.18 in)



NOTE:

For optimum clutch operation it is advisable to replace the clutch springs as a set if one or more are faulty.

7. Roll the push rod across a surface plate. If rod is bent, replace.



8. Check the clutch push lever. If excessively worn, repair using 300 ~ 400 grit sand paper or replace.

Reassembly

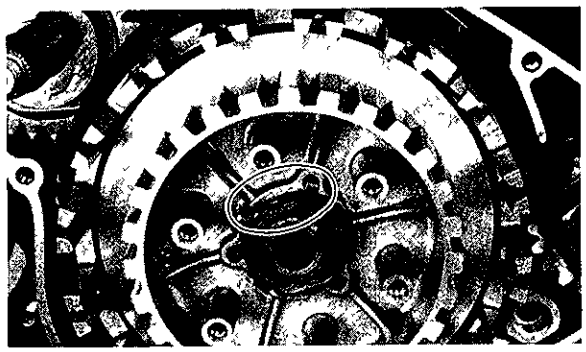
When installing the engine guard reverse the removal procedure taking following steps:

1. Install new lock washer and lock nut, and tighten the nut to the specification. Use the Clutch Holding Tool (90890-04086) to hold the clutch boss.

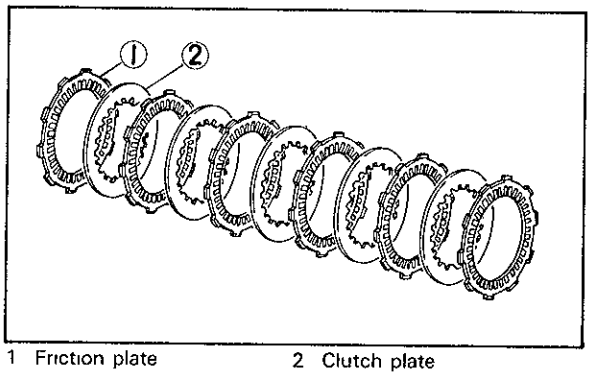
NOTE:

After securing the nut, bend the lock washer tabs along the nut flats.

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



2. Install the friction plates and clutch plates alternately on the clutch boss, starting with a friction plate and ending with a friction plate.

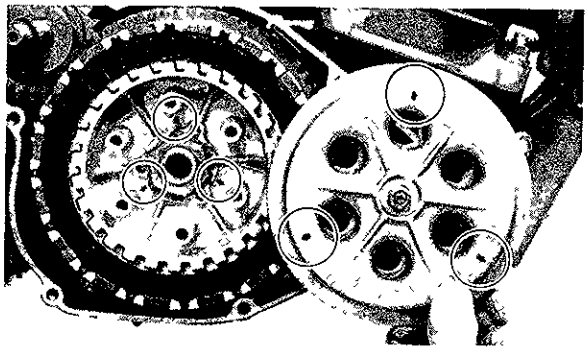


1 Friction plate 2 Clutch plate

3. Install the clutch pressure plate onto the clutch boss.

NOTE:

When installing the pressure plate, align the arrow marks on the pressure plate with match marks on the clutch boss.



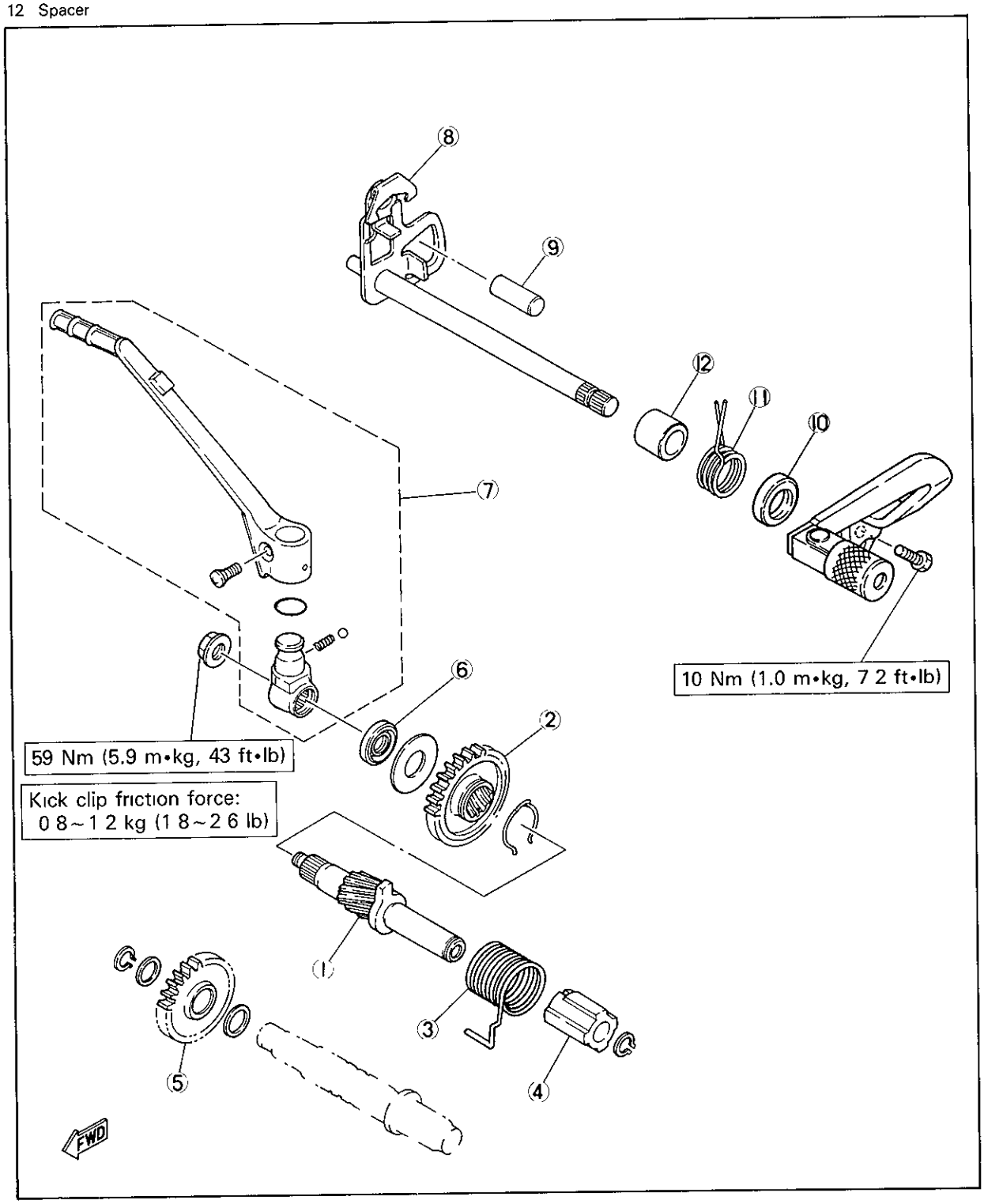
4 Install the clutch springs and screws. Torque the screw to specification.

Clutch spring:
10 Nm (1.0 m•kg, 7.2 ft•lb)

5. Readjust the clutch.

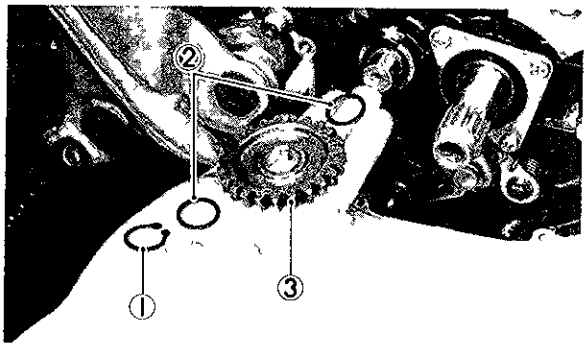
STARTER/SHIFT SHAFT

1 Kick starter assembly
2 Kick gear
3 Torsion spring
4 Spring guide
5 Kick idle gear
6 Oil seal
7 Kick crank assembly
8 Shift shaft assembly
9 Dowel pin
10 Oil seal
11 Torsion spring
12 Spacer



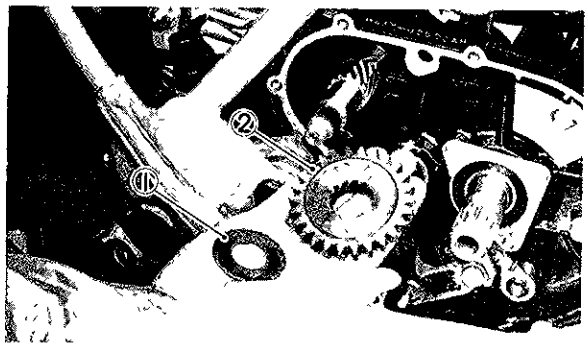
Removal

1. Remove the clutch assembly.
2. Remove the circlip, washers and kick idle gear.



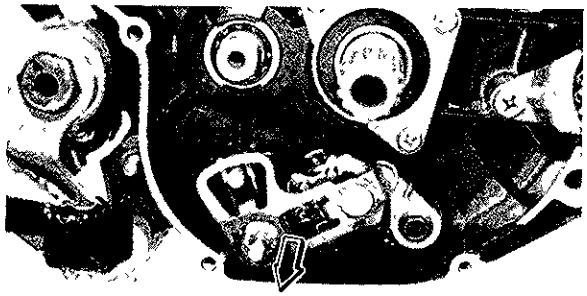
1 Circlip 2 Washer 3 Kick idle gear

3. Remove the plain washer and kick gear.



1 Plain washer 2 kick gear

4. Remove the change pedal.

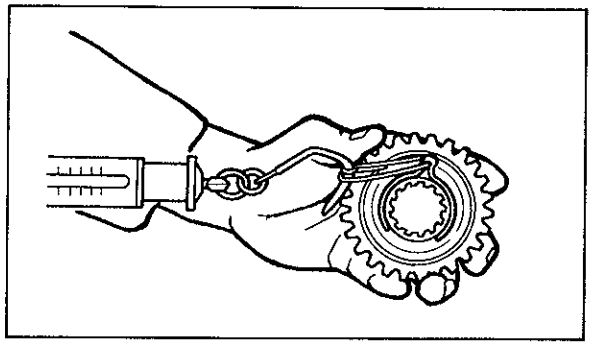


5 Remove the shift shaft.

Inspection

1. Check the surface of the kick gear and idle gear for pitting or other damage. If the damage is severe, repalce the gear(s).
2. Check the tension of the return spring. If it is damaged or fatigued, replace the spring.
3. Check the tension of the kick gear spring clip with a spring gauge. If either clip is not within specification, replace it.

Kick clip friction force:
0.8~1.2 kg (1.8~2.6 lb)



4 Inspect the shift return spring. A broken or worn spring will impair the return action of the shifting mechanism.
5. Chek the change shaft assembly for benging of shaft, worn or bent spline, and broken or worn shift arm spring A bent shaft will cause hard shifting.

Reassembly

When installing the clutch, reverse the removal procedure taking following step.

1. Install the kick gear.

NOTE:

When installing the kick gear, align the kick gear clip with the groove into the crankcase.



2. After installing the kick gear assembly, be sure to check whether it operates smoothly or not.

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4 CHASSIS INSPECTION AND RPAIR

FRONT WHEEL/REAR WHEEL 4-1
FRONT WHEEL REMOVAL 4-3
REAR WHEEL REMOVAL 4-3
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REASSEMBLY 4-16

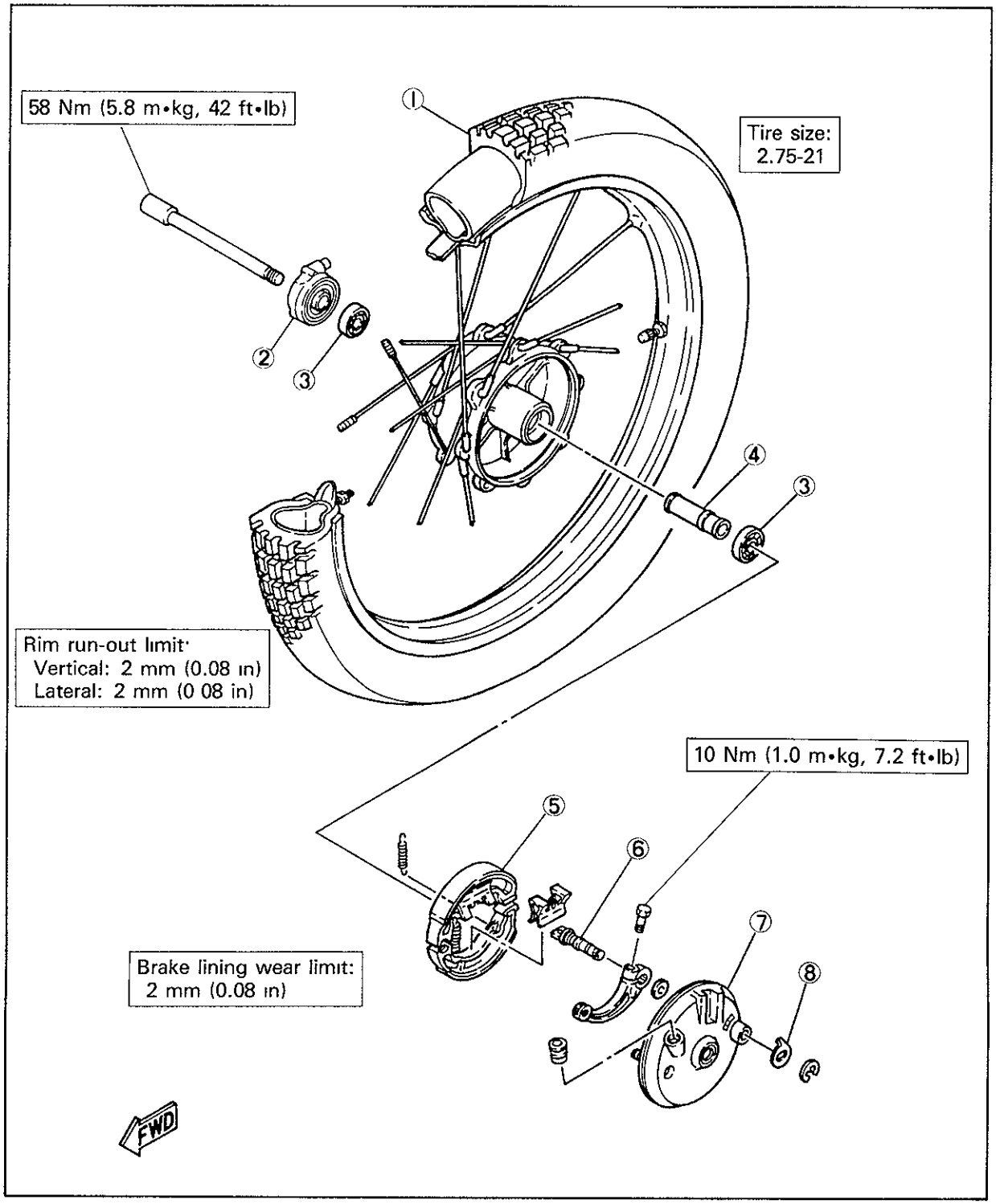
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REMOVAL 4-19
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REASSEMBLY 4-20

4

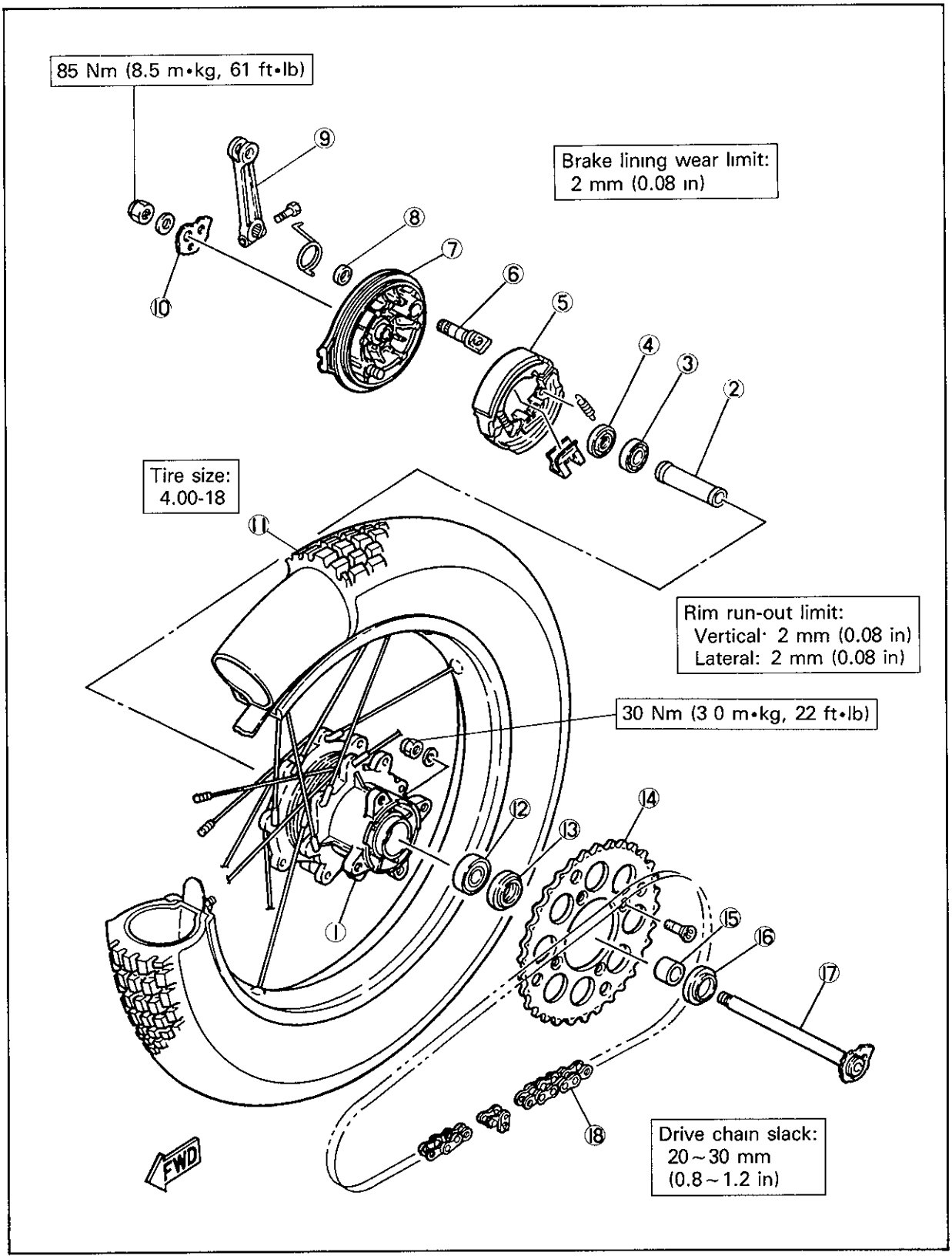
CHASSIS INSPECTION AND REPAIR

FRONT WHEEL/REAR WHEEL

1 Front wheel
2 Speedometer cable housing
3 Bearing
4. Collar
5 Brake shoe
6 Cam shaft
7 Brake shoe plate
8 Wear indicator

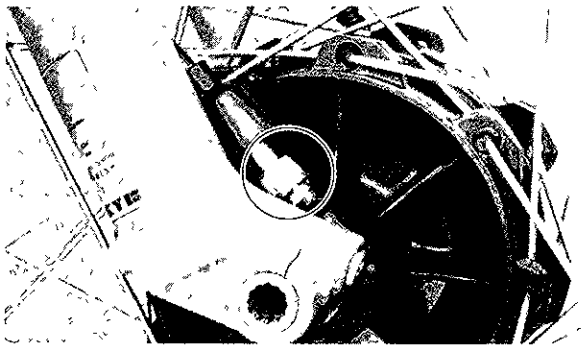


1 Rear hub
2 Spacer
3 Bearing
4 Oil seal
5 Brake shoe plate
6 Cam shaft
7 Brake shoe complete
8 Oil seal
9. Cam shaft lever
10 Chain puller
11 Rear wheel
12 Bearing
13 Oil seal
14 Driven sprocket
15 Collar
16 Hub dust cover
17 Wheel axle
18 Drive chain

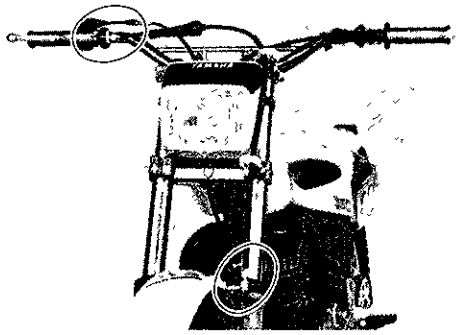


Front Wheel Removal

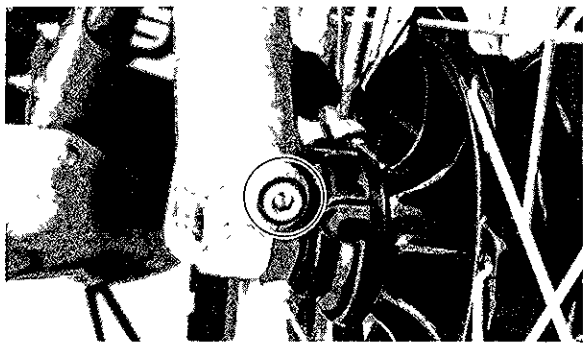
1. Elevate the front wheel by placing a suitable stand under the engine.
2. Remove the speedometer cable from the speedometer gear unit.



3. Remove the brake cable; loosen all cable adjusters and remove the cable from the handlebar lever holder.



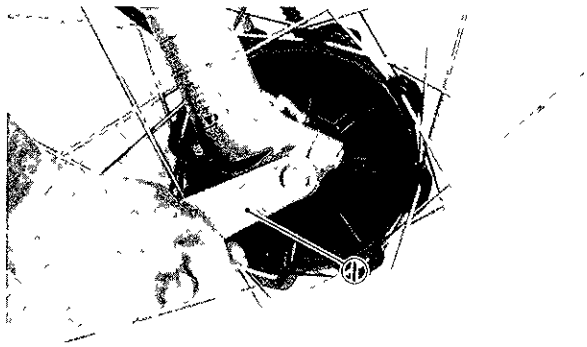
4. Loosen the axle holder bolt, and loosen the wheel axle.



5. Turn and pull out the front wheel axle; the wheel assembly can now be removed.

NOTE:

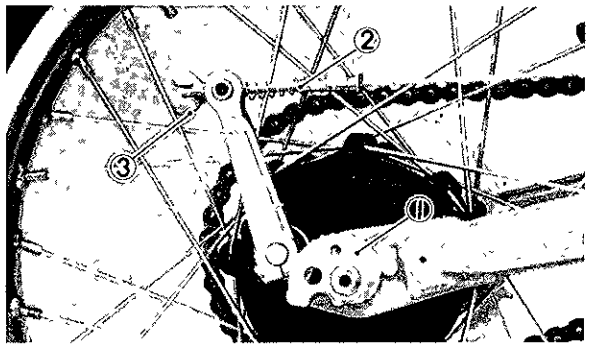
When removing, use the special wrench which is included in the owner's tool kit.



1 Special wrench

Rear Wheel Removal

1. Elevate the rear wheel by placing a suitable stand under the engine.
2. Remove the brake adjuster and brake rod from the brake cam lever.
3. Remove the wheel axle nut.
4. The rear wheel assembly, collar, chain pullers, etc., can be removed from the machine by pulling the wheel axle.

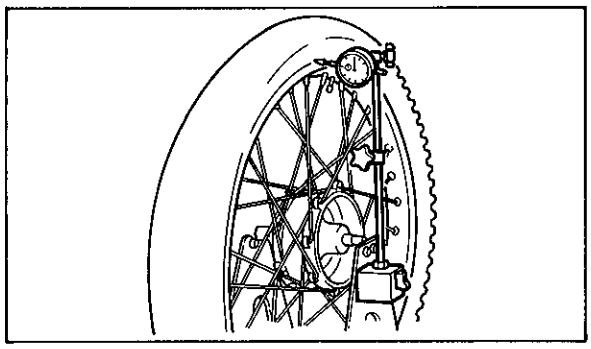


1 Chain puller 2 Brake rod 3 Adjuster

Inspection

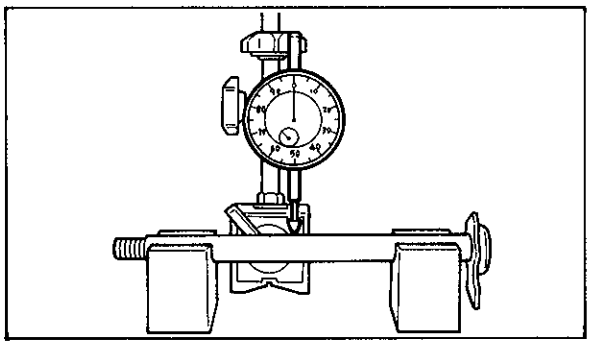
1. Wheel
   a. Check for cracks, bends or warpage of the wheel. If a wheel is deformed or cracked, it must be replaced.
   b. Check wheel run-out. If the deflection exceeds the tolerance below, check the spoke-tension, rim deformation, and wheel bearings. Replace the wheel as required.

Rim run-out limit: Vertical — 2 mm (0.08 in) Lateral — 2 mm (0.08 in)



2. Wheel axle
   a. Remove any corrosion from the axle with fine emery cloth. Place the axle on a surface plate, and check for bends. If bent, replace axle. Do not attempt to straighten a bent axle.

Bend limit: 0.25 mm (0.01 in)

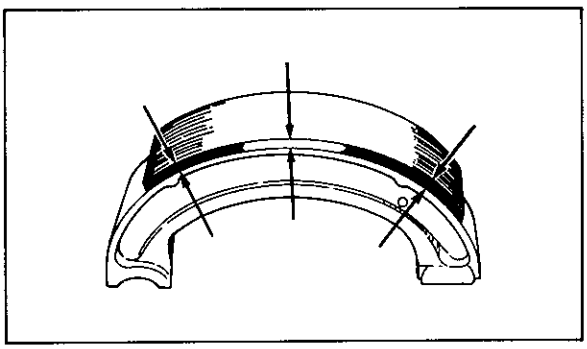


3. Brake shoe
   a. Check the brake lining thickness with slide calipers.

NOTE:

Replace the brake shoes as a set if either is found to be worn to the wear limit.

Brake lining thickness: 4 mm (0.16 in) Wear limit: 2 mm (0.08 in)

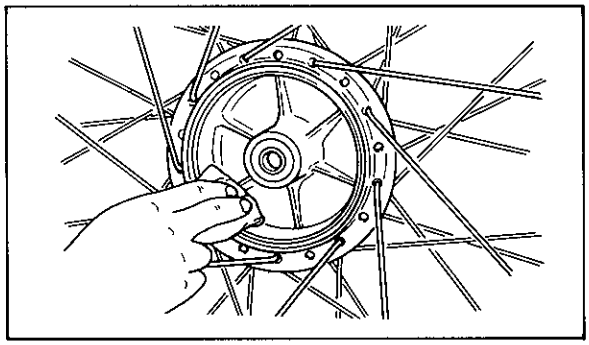


   b. Check any glazed areas on the brake lining surface. If any, remove the glazed areas from brake lining using coarse sand paper.

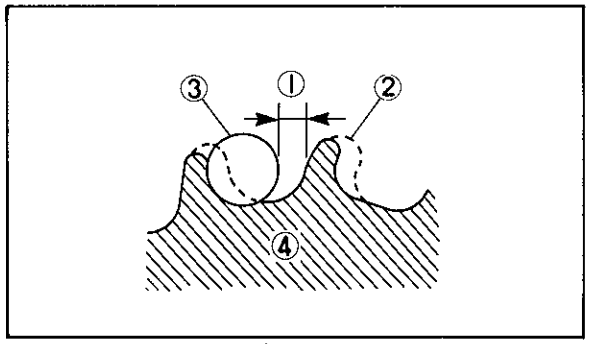
NOTE:

After using the sand paper, clean off the polished particles with cloth.

4. Brake drum
   a. Oil or scratches on the inner surface of the brake drum will impair braking performance or result in abnormal noises. Remove oil by wiping with a rag soaked in lacquer thinner or solvent. Remove scratches by lightly and evenly rubbing with emery cloth.

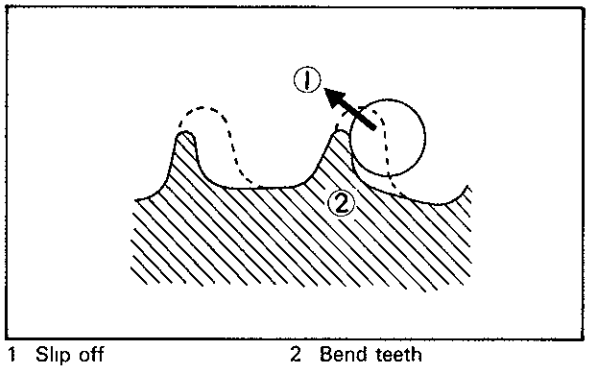


5. Sprockets
   a. Check sprocket wear. Replace if tooth width has decreased as shown.



1 1/4 tooth
2 Correct
3 Roller
4 Sprocket

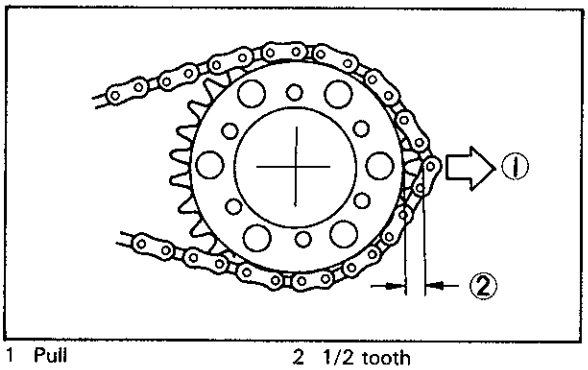
   b. Replace if tooth wear shows a pattern resembling that in the illustration.



1 Slip off 2 Bend teeth

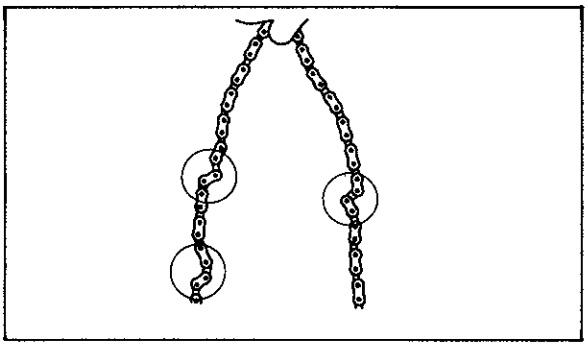
6. Chain

a. With the chain installed on the machine, excessive wear may be checked for by taking up chain freeplay and pulling the chain away from the rear sprocket. If the chain will lift away more than one-half the length of the sprocket teeth, remove and inspect the chain. If any portion of the chain shows signs of damage, or if either sprocket shows signs of excessive wear, remove and replace.



1 Pull 2 1/2 tooth

b. Check the chain for stiffness. If stiff, soak in solvent solution, clean with wire brush and dry with high pressure air. Oil chain thoroughly and attempt to work out kinks. If still stiff, replace.



c. Check the side plate for damage. Check to see if excessive play exists in pins and rollers. Check for damaged rollers. Replace as required.

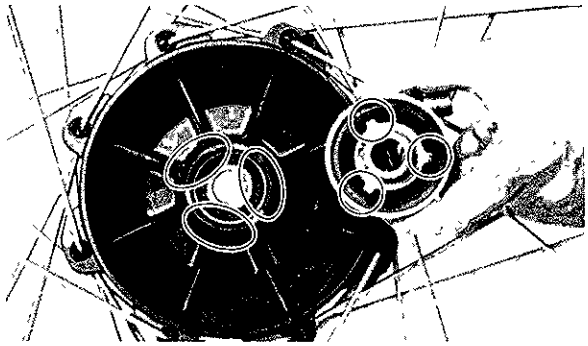
NOTE:

If either chain or sprocket must be replaced due to excessive wear, be sure to replace both as a set.

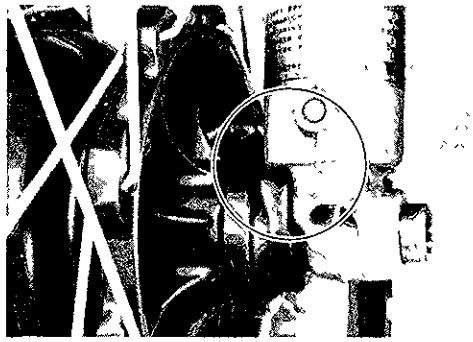
Front Wheel Installation

When installing the front wheel, reverse the removal procedure. Pay attention to the following points.

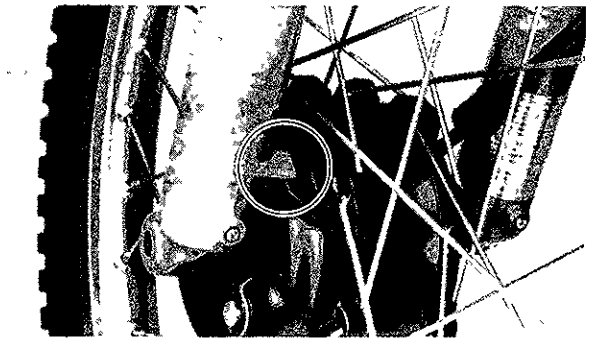
1. Make sure the three notches in the wheel hub are meshed with the three projections in the speedometer gear unit.



2. Be sure the stopper on the speedometer gear unit correctly contacts the bottom of the outer tube.



3. Be sure the boss on the outer fork tube correctly engages with the locating slot on the brake shoe plate.



4. Tighten the wheel axle and axle holder bolt.

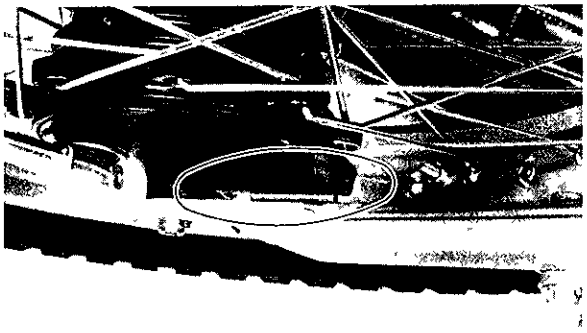
Wheel axle: 58 Nm (5.8 m•kg, 42 ft•lb) Axle holder bolt: 20 Nm (2.0 m•kg, 14 ft•lb)

5. Reinstall the brake cable and speedometer calbe.
6. Adjust the play in the brake lever.

Rear Wheel Installation

The rear wheel can be reassembled by reversing the disassembly procedure. Pay attention to the following points:

1. Be sure the swingarm boss correctly engages the locating slot on the brake shoe plate.



2. Adjust the drive chain.
3. Make sure the right chain puller is installed with the number punched side outward.
4. Tighten the axle nut.

Axle nut: 85 Nm (8.5 m•kg, 61 ft•lb)

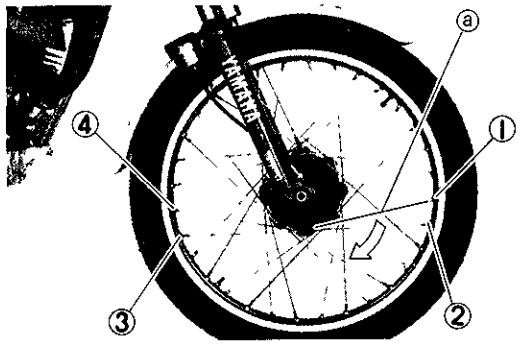
5. Adjust the rean brake

WARNING:

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

Spoke Replacement

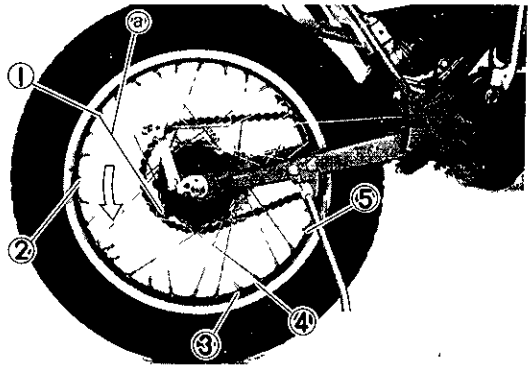
1. Front wheel
   a. When replacing the spoke ⓐ, remove the nipples ①, ②, ③ and ④.
   b Turn the spoke ⓐ up to ③. Then, pull the spoke out.
   c. Insert and fit a new spoke.



   d. Retighten the nipples.

Nipple: 6 Nm (0 6 m•kg, 4.3 ft•lb)

2. Rear wheel
   a. When replacing the spoke ⓐ, remove the nipplies ①, ②, ③, ④ and ⑤.
   b. Turn the spoke ⓐ up to ④. Then, pull the spoke out.
   c. Insert and fit a new spoke.

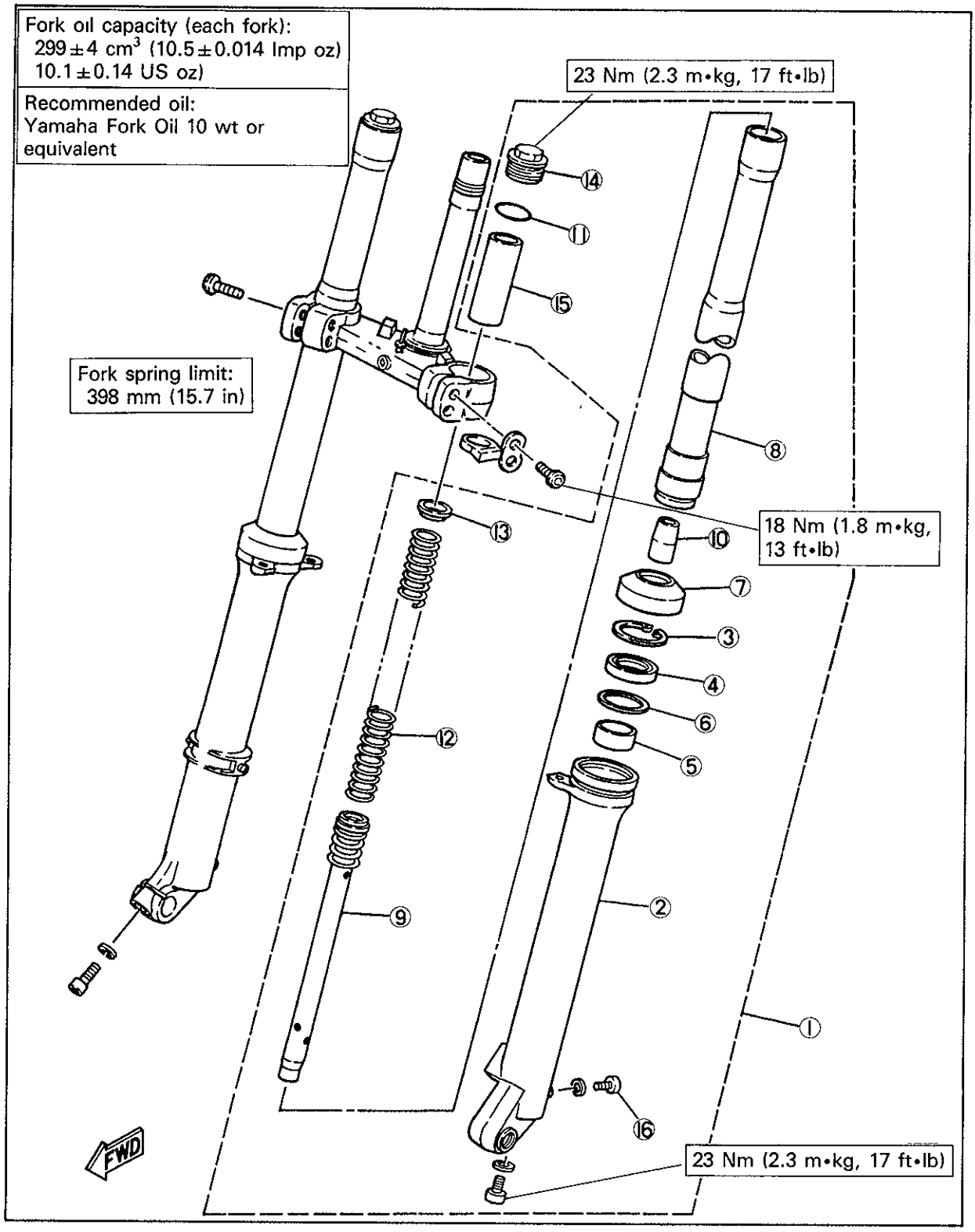


   d. Retighten the nipples.

Nipple: 6 Nm (0.6 m•kg, 4.3 ft•lb)

FRONT FORKS

1. Front fork assembly
2 Outer tube
3 Retaining clip
4. Oil seal
5. Slide metal
6. Plain washer
7. Dust seal
8 Inner tube
9. Cylinder complete
10 Oil lock piece
11 O-ring
12 Fork spring
13. Spring seat
14 Cap bolt
15. Spacer
16. Drain screw

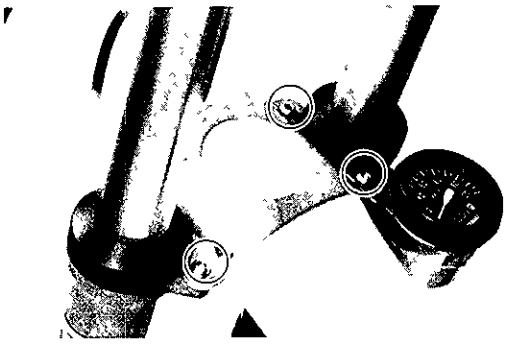


Removal

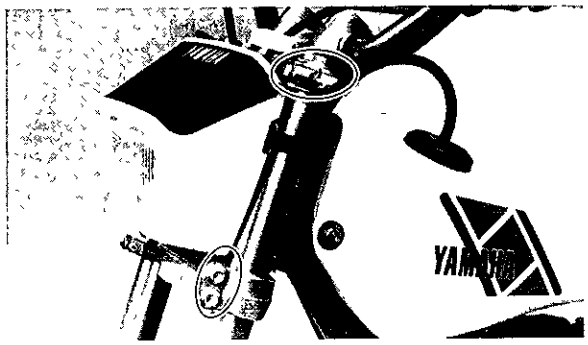
WARNING:

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

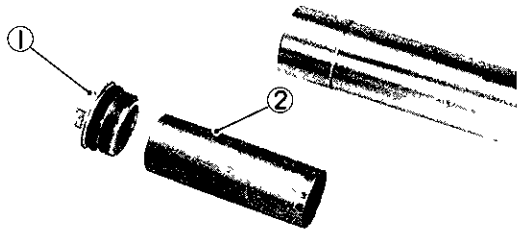
1. Remove the front wheel.
2. Remove the fork brace.



3. Loosen the cap bolt.
4. Remove the headlight body. Then, loosen the front fork pinch bolts in the handle crown and under bracket.

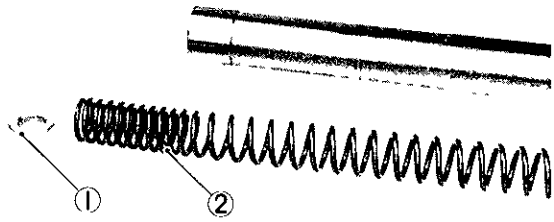


5. Remove the front forks.
6. Remvoe the cap bolt and spacer.



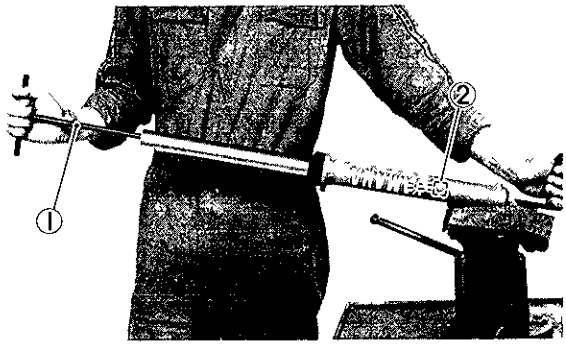
1 Cap bolt 2 Spacer

7 Place an open container under the fork, and turn the fork up side down, and drain the oil.
8. Remove spring seat and fork spring



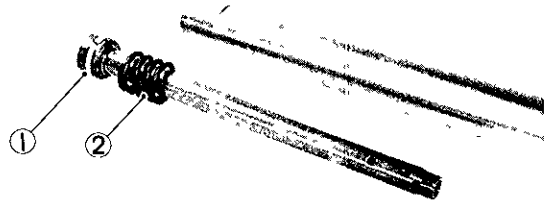
1 Spring seat 2 Fork spring

9. Remove the cylinder securing bolt from the bottom of the outer fork tube with T-handle (90890-01326) and Damper Rod Holder (90890-01365).



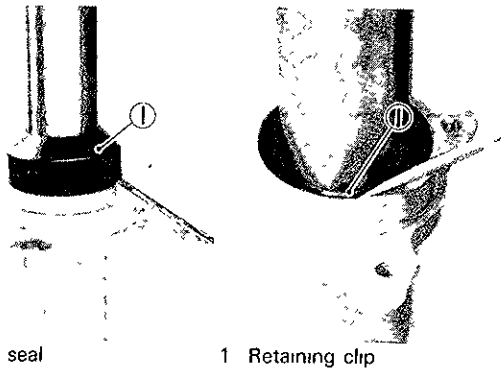
1 T-handle (90890-01326)
2 Damper Rod Holder (90890-01365)

10. Remove the damper rod (cylinder complete) and rebound spring.



1 Damper rod 2 Rebound spring

11. Remove the dust seal with a thin screw driver. Take care not to scratch the inner fork tube. Discard the dust seal.
12. Remove the retaining clip from the outer fork tube.



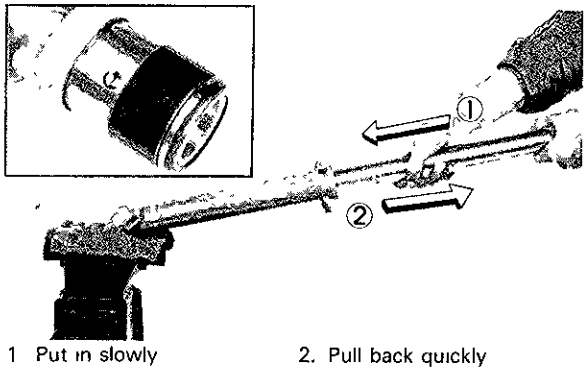
1 Dust seal

1 Retaining clip

13. Hold the front fork outer tube in a vise horizontally. Put in the inner fork tube just before it bottoms out, and then pull it back quickly. Repeat this step until the inner fork tube together with oil seal, plain washer and slide metal can be pulled out from the outer fork tube. Then, remove the oil lock piece.

CAUTION:

Don't bottom out the inner fork tube in the above step, or the oil lock piece will be damaged.



1 Put in slowly

2. Pull back quickly

Inspection

Clean and inspect all front fork components. Replace any worn or damaged components prior to reassembly.

1. Check the inner fork tube and replace if the tube is badly scratched or bent.

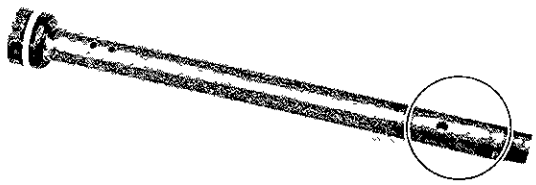
WARNING:

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

2. Check the outer surface of the fork seal seat in the outer fork tube for damge. Replace the tube if necessary.
3. Check the outer tube for bents. Replace the tube if necessary.
4. Check the free length of the fork spring.

Fork spring free length: 402 mm (15.8 in) Fork spring limit: 398 mm (15.7 in)

5. Check the O-ring of the cap bolt. Replace any damaged O-ring.
6. Check the damper rod for wear, damage, or contamination. Blow out all oil passages with compressed air. If it is worn or damaged, replace it.



7. Check the oil lock piece. Replace it, if damaged.

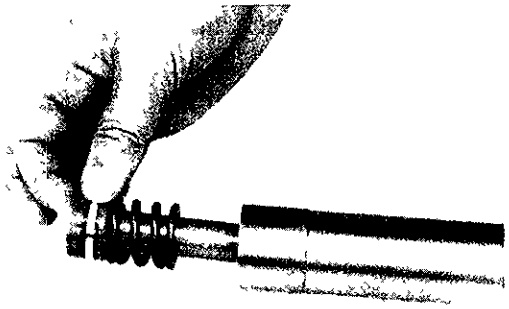
Reassembly

NOTE:

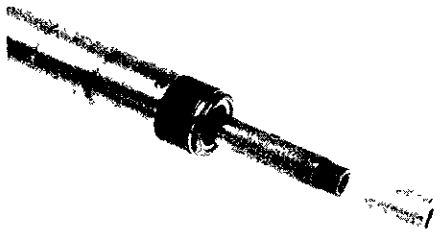
In front fork reassembly, be sure to use following new parts.

- Oil seal
- Dust seal
- Slide metal

1. Make sure all components are clean before reassembly.
2. Install the rebound spring to the damper rod.
3. Slide the damper rod into the inner fork tube from its top.



4. Fit the oil lock piece over the damper rod sticking out of the inner fork tube.



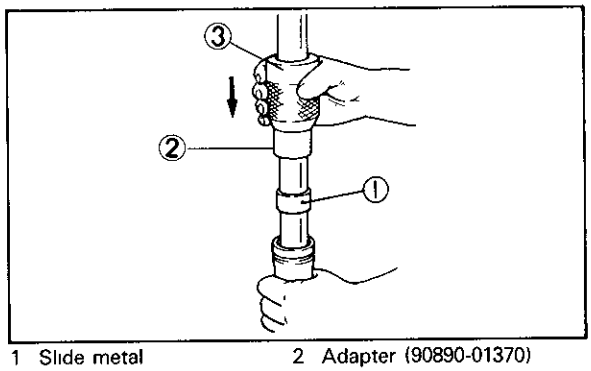
5. Install the inner tube into the outer tube.
6. Install the cylinder securing bolt to the outer tube with T-handle (90890-01326) and Damper Rod Holder (90890-01365). Torque the bolt to the specification.

NOTE:

Before installing the cylinder securing bolt, apply thread-locking compound such as LOCTITE® to the cylinder securing bolt thread.

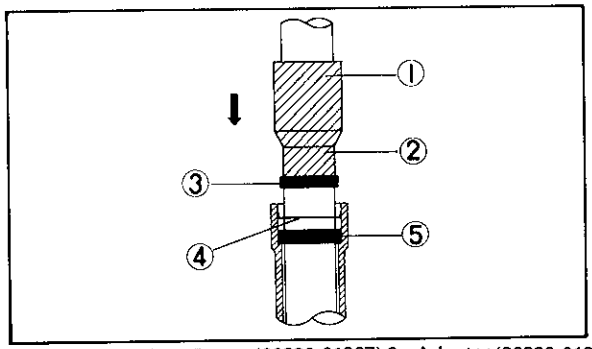
Cylinder securing bolt: 23 Nm (2.3 m•kg, 17 ft•lb)

7. Install the slide metal by pressing it in with Front Fork Seal Driver (90890-013607) and Adapter (90890-01370). Then, install the plain washer into the outer fork tube.



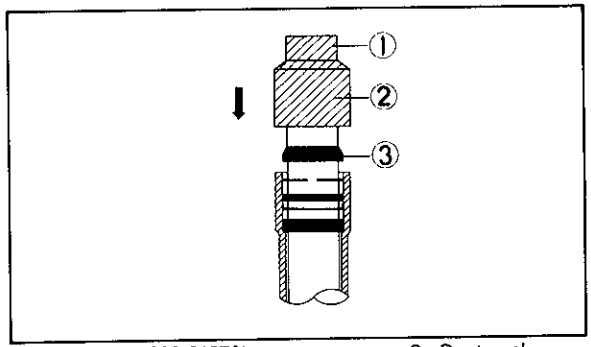
1 Slide metal 2 Adapter (90890-01370)
3 Front Fork Seal Driver (90890-01367)

8. Apply oil to the oil seal, and install the oil seal by pressing it in with Front Fork Seal Driver (90890-01367) and Adapter (90890-01370). Then, install the retaining clip.



1 Front Fork Seal Driver (90890-01367) 2 Adapter (90890-01370)
3 Oil seal 4 Plain washer 5 Slide metal

9. Install the dust seal by pressing it in with Front Fork Seal Driver (90890-01367) and Adapter (90890-01370)



1 Adapter (90890-01370) 3 Dust seal
2 Front Fork Seal Driver (90890-01367)

10. Install the fork spring and spring seat in that order.

NOTE:

When installing the fork spring, the greater pitch should be at the bottom.

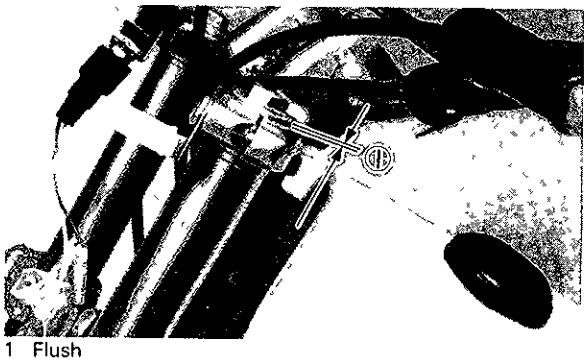
11 Pour the specified amount of recommended fork oil into the inner fork tube.

Fork oil capacity (each fork): 299 ± 4 cm^3 (10.5 ± 0.14 Imp oz, 10.1 ± 0.14 US oz) Recommended oil: SAE 10W30 type SE motor oil

12. After filling, slowly pump the forks up and down to distribute the oil and install the spacer. Then, temporarily install the cap bolt.
13. Slide the fork into the under bracket and handle crown in the following way.

NOTE:

Fit the front fork by pushing it up until its top is flush with the handle crown top end. Holding the front fork in this position, temporarily tighten the pinch bolts with fingers.



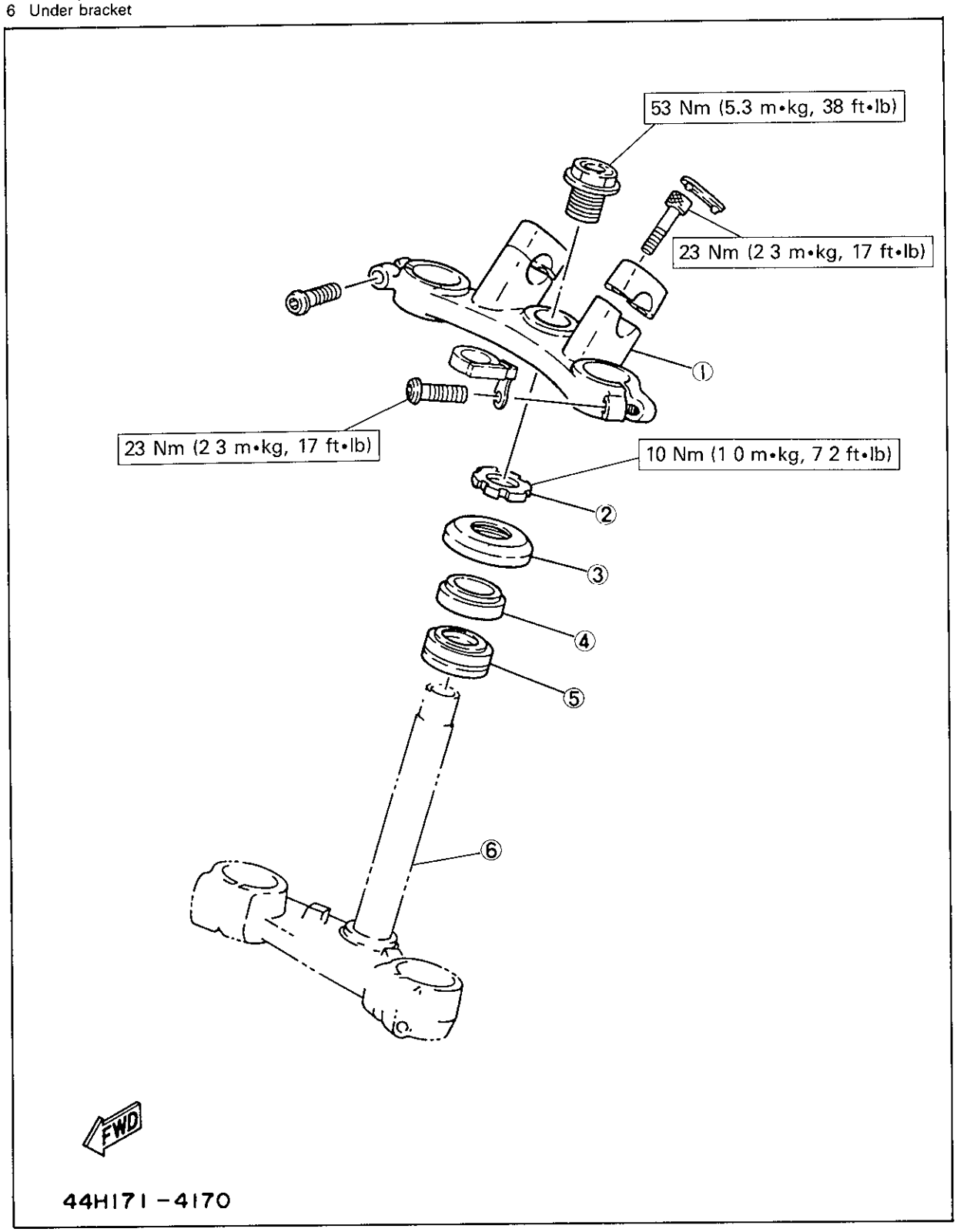
1 Flush

14. Tighten the fork pinch bolts at the handle crown and under bracket. Then, tighten the cap bolt.

Handle crown: 23 Nm (2.3 m•kg, 17 ft•lb) Under bracket: 18 Nm (1 8 m•kg, 13 ft•lb) Cap bolt. 23 Nm (2.3 m•kg, 17 ft•lb)

STEERING SHAFT

1 Handle crown
2 Steering fitting nut
3 Bearing race cover
4 Bearing
5 Bearing
6 Under bracket



Removal

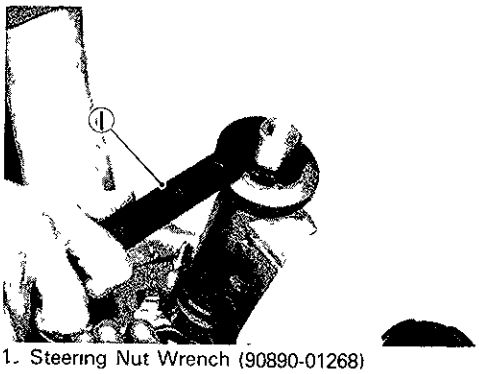
1. Remove the headlight body.
2. Remove the front wheel and front forks.
3. Remove the handleber.
4. Remove the handle crown stem bolt, and remove the handle crown.



5. Remove the steering fitting nut with the Steering Nut Wrench (90890-01268).

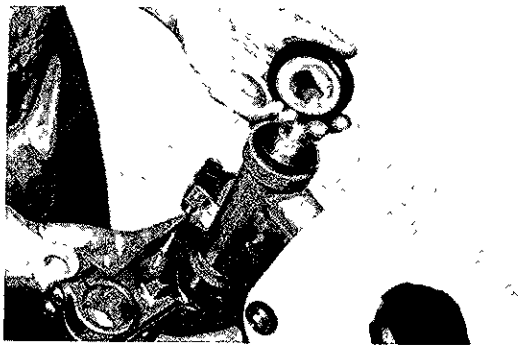
NOTE:

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

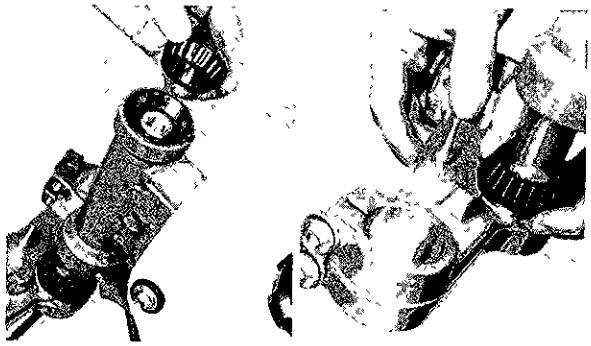


1. Steering Nut Wrench (90890-01268)

6. While still supporting the under bracket, remove the bearing race cover

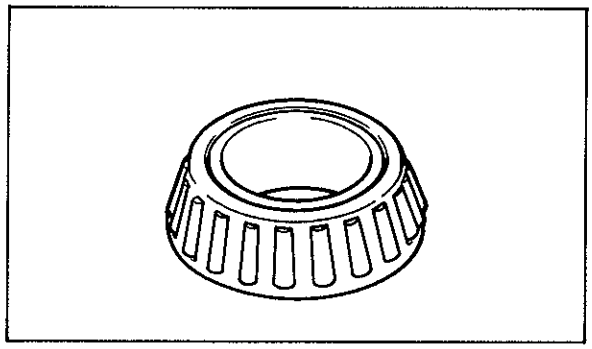


7. Remove the under bracket with lower bearing. Then, remove the upper bearing.



Inspection

1. Wash the bearings in solvent.
2. Inspect the bearings for pitting or other damage. Replace the bearings if pitted or damaged. Replace the races when bearings are replaced.



3. Clean and inspect the bearing races. Spin the bearings by hand. If the bearings are not smooth in their operation in the races, replace bearings and races.



Reassembly

When reassembling, reverse the removal procedure. Note the following points:

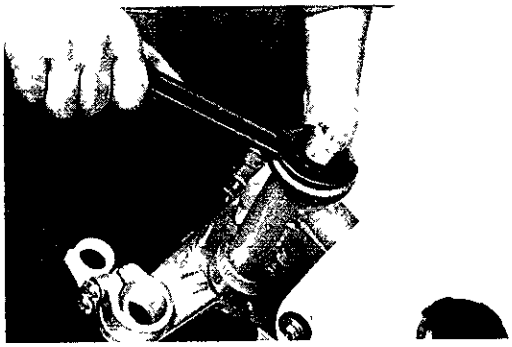
CAUTION:

Hold the under bracket until it is secured.

1. Grease the bearings, bearing cover and under bracket bottom with medium weight wheel bearing grease.



2. Tighten the steering fitting nut until the steering head is tight, but does not bind when the under bracket is turned.



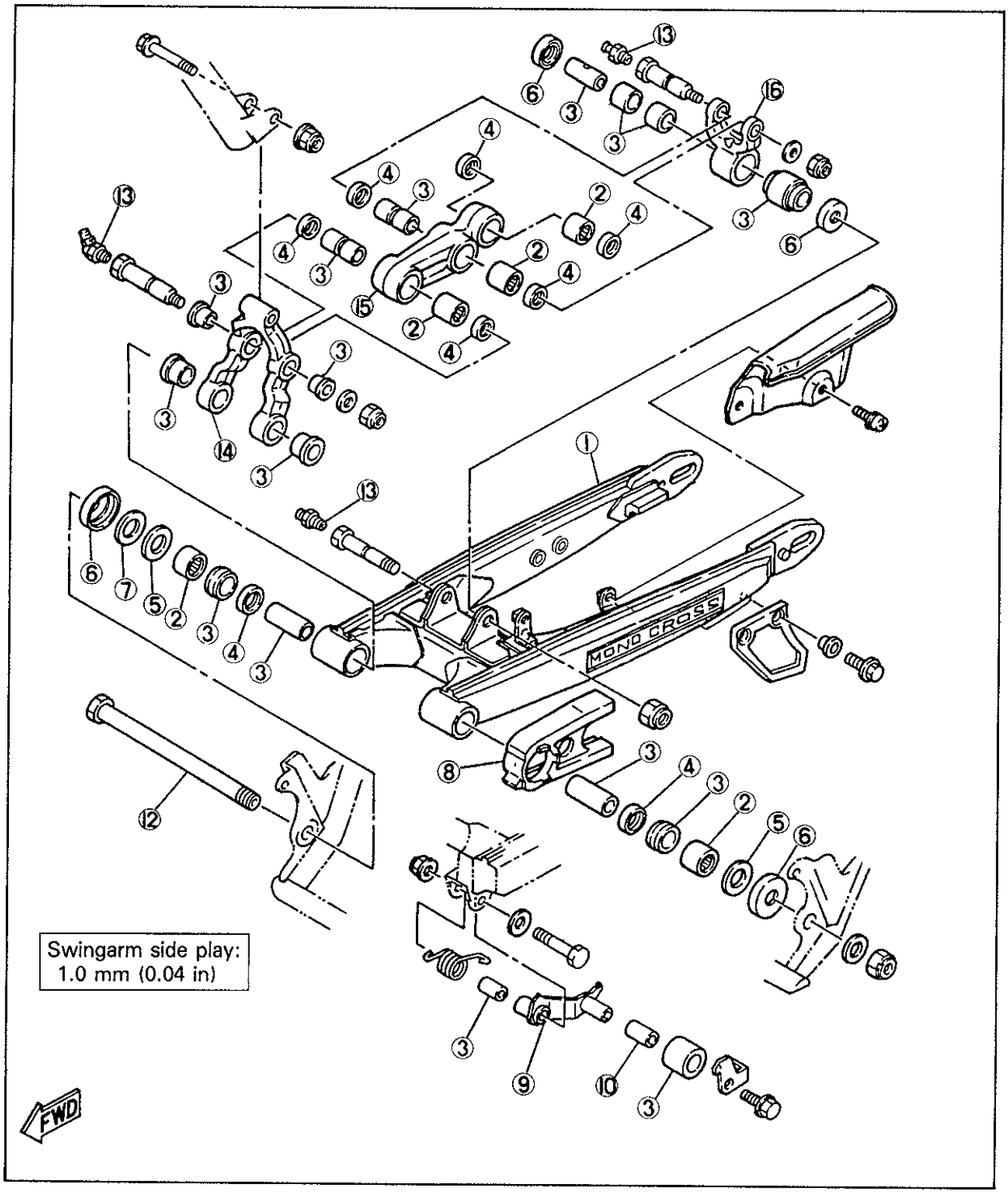
3. When reassembly is complete, check the under bracket by turning it from lock to lock. If there is any binding or looseness, readjust the steering shaft tightness.

Handle crown· 53 Nm (5.3 m•kg, 38 ft•lb)

SWINGARM

1 Swing arm 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

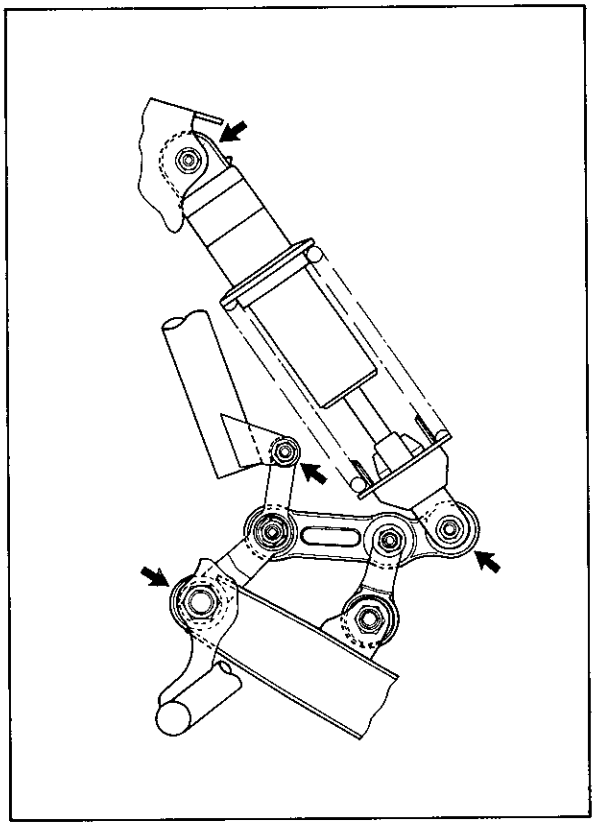
Pivot shaft:
85 Nm (8.5 m•kg, 61 ft•lb)
Relay arm and bracket relay:
32 Nm (3.2 m•kg, 23 ft•lb)
Relay arm and rear shock absorber:
30 Nm (3.0 m•kg, 22 ft•lb)
Relay arm and connecting rod:
32 Nm (3 2 m•kg, 23 ft•lb)
Swingarm and connecting rod:
58 Nm (5.8 m•kg, 42 ft•lb)
Bracket relay and frame:
30 Nm (3.0 m•kg, 22 ft•lb)



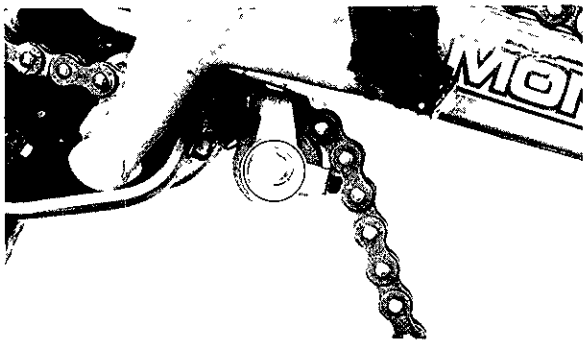
Swingarm side play:
1.0 mm (0.04 in)

Removal

1. Remove the rear wheel.
2. Remove the rear shock absorber.
3. Remove the relay arm top mounting bolt.
4. Remove the pivot shaft.



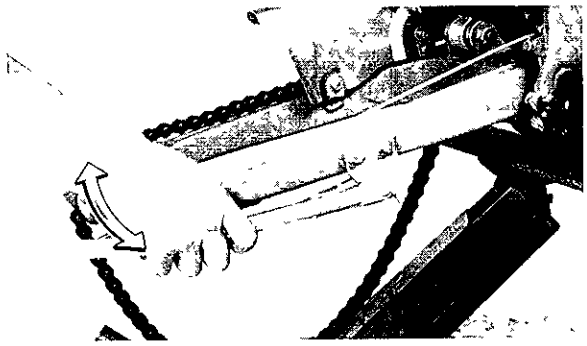
5. Remove the chain tensioner, and remove the swingarm assembly.



Inspection

1. Remove the rear wheel and the shock absorber. Grasp the swingarm and try to move it from side to side as shown. Check for free play.

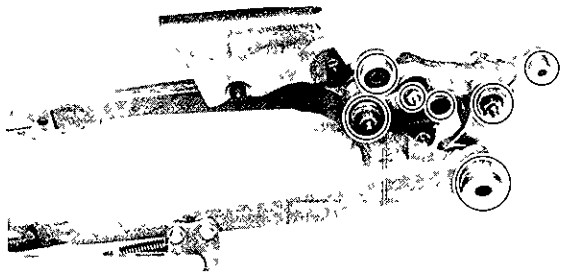
Free play (at end of swingarm):
1.0 mm (0.04 in)



2. If free play is excessive, remove the swingarm and replace the bushings or bearings. Replace the thrust cover or oil seal if necessary.
3. The swingarm is mounted on needle bearings and bushings. Move the swingarm up and down. The swingarm should move smoothly, without tightness, binding, or rough spots that could indicate damaged bearings.

Inspection and Lubrication

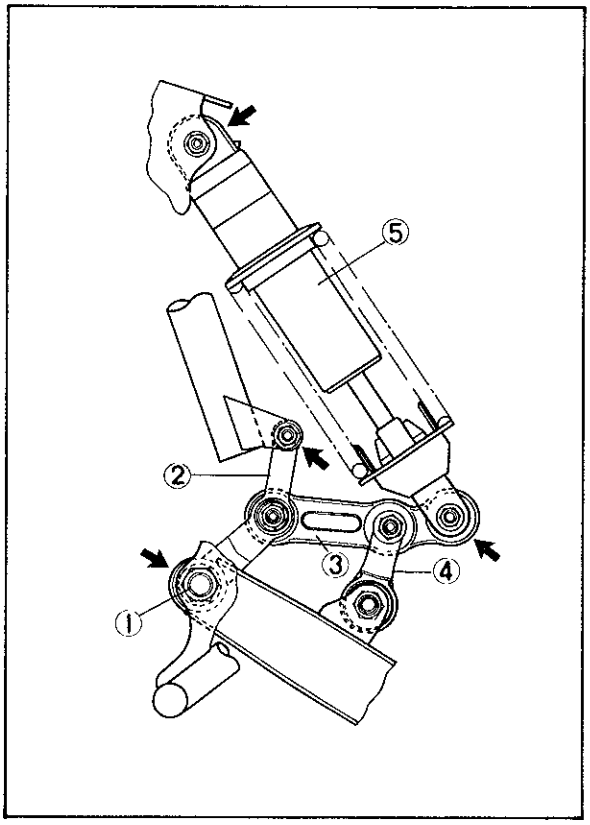
1. Examine the thrust covers and oil seals. Replace if they are damaged.
2. Inspect the bearings and bushings for scratches or other damage.
   Make sure that the needle bearing rolles freely.
   If the bearings or bushings are damaged, they should be replaced.



Reassembly

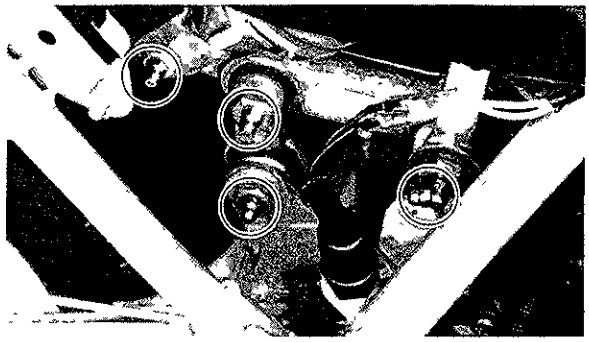
1. Assemble the swingarm by reversing the removal procedures. Torque the bolt to specification

Pivot shaft:
85 Nm (8.5 m•kg, 61 ft•lb)
Relay arm and bracket relay:
32 Nm (3.2 m•kg, 23 ft•lb)
Relay arm and rear shock absorber:
30 Nm (3.0 m•kg, 22 ft•lb)
Relay arm and connecting rod.
32 Nm (3.2 m•kg, 23 ft•lb)
Swingarm and connecting rod:
58 Nm (5.8 m•kg, 42 ft•lb)
Bracket relay and frame:
30 Nm (3.0 m•kg, 22 ft•lb)



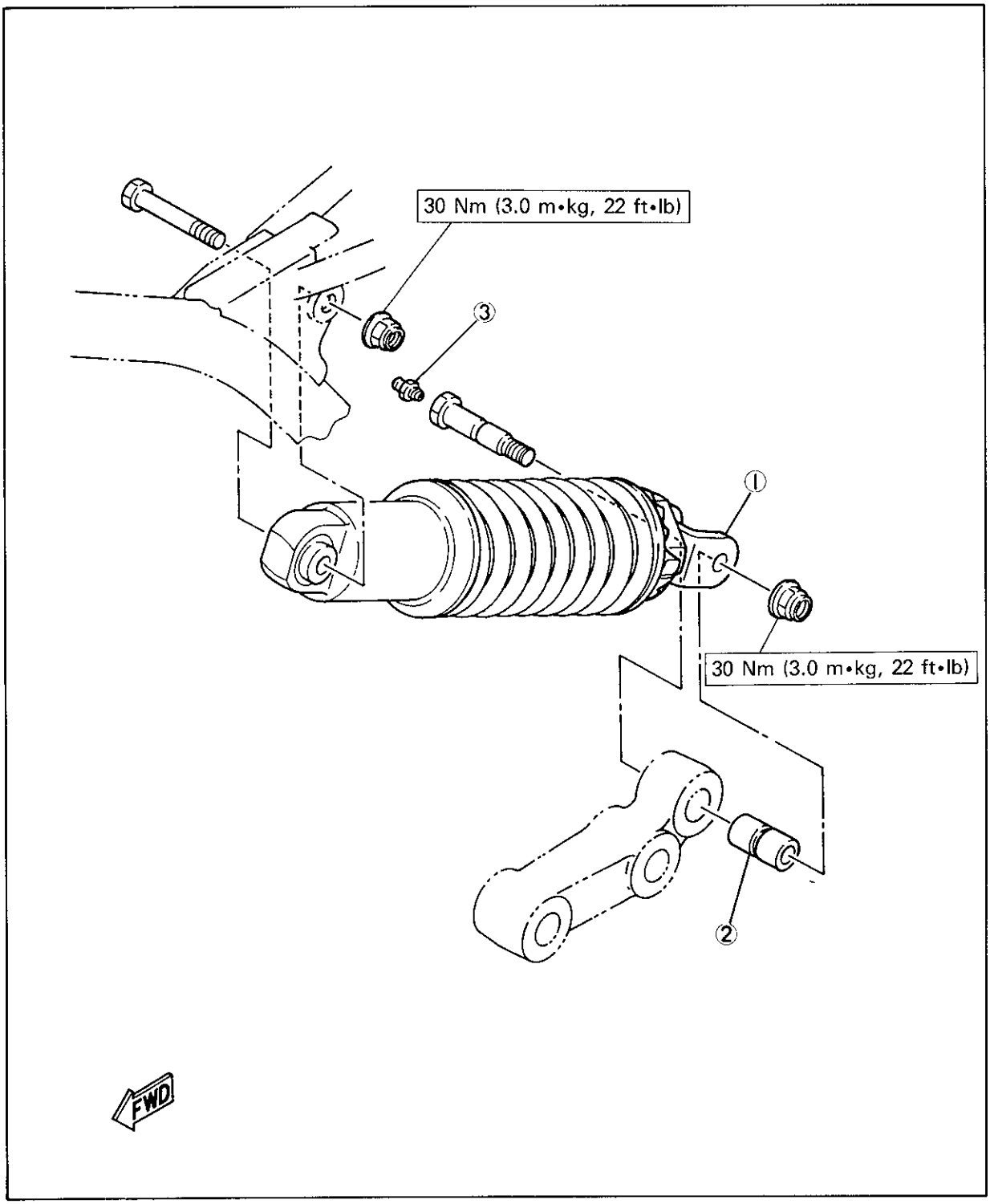
1 Pivot shaft
2 Bracket relay
3 Relay arm
4. Connecting rod
5 Rear shock absorber

2. Using a grease gun, lubricate the pivot points.



REAR SHOCK (MONOCROSS SUSPENSION "DE CARBON" SYSTEM)

1. Rear shock absorber assembly
2. Bush
3. Grease nipple



Handling Notes

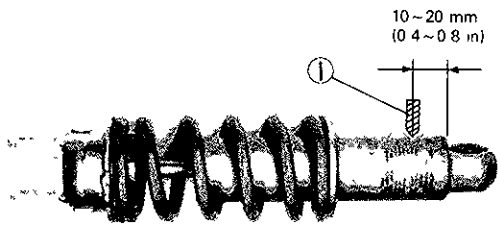
WARNING:

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

1. **Do not tamper with or attempt to open the cylinder assembly.**
2. **Do not subject shock absorder to an open flame or other high heat source. This may cause the unit to explode due to excessive gas pressure.**
3. **Do not deform or damage the cylinder in any way. Cylinder damage will result in poor damping performance.**
4. **Take care not to scratch the contact surface of the piston rod with the cylinder; or oil could leak out.**
5. **When scrapping the shock absorber, follow the instructions on disposal.**

Notes on Disposal

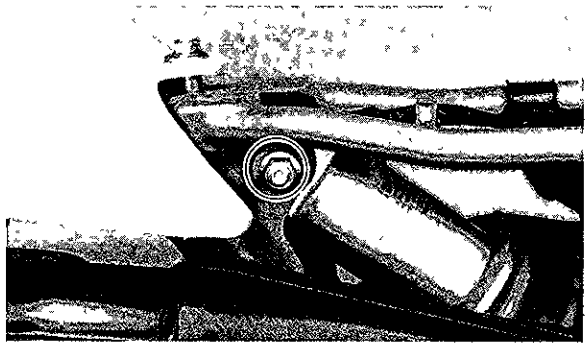
Before disposing the shock absorber, be sure to extract the nitogen gas To do so, drill a 2 ~ 3 mm (0.08 ~ 0.12 in) hole through the tank at a position 10 ~ 20 mm (0 4 ~ 0.8 in) from the bottom end of the tank. At this time, wear eye protection to prevent eye damage from escaping gas and/or metal chips.



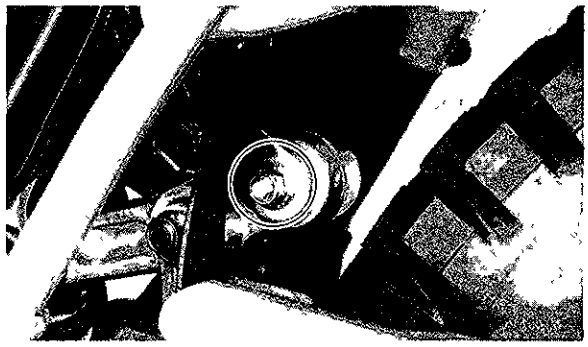
1 Drill
ø2 ~ 3 mm (ø0 08 ~ 0 12 in)

Removal

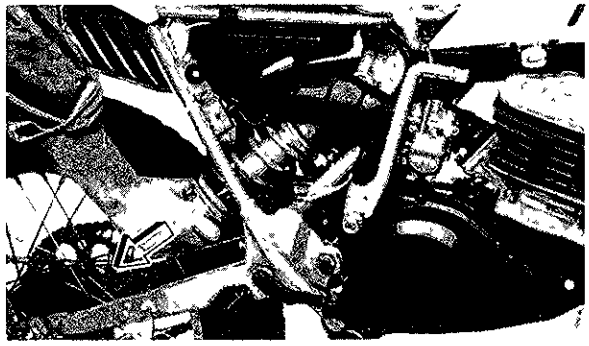
1. Remove the seat.
2. Remove the shock absorber top mounting bolt.



3. Remove the shock absorber bottom mounting bolt.



4. Carefully remove the shock absorber from the frame.



Inspection

1. Check the rod, and if it is bent or damaged, replace the shock absorber.
2. Check for oil leakage. If oil leakage is evident, replace the shock absorber
3 By moving the spring, check to see if it has proper damping effect. Slight resistance should be felt on the compression (down) stroke and considerable resistance should be felt on the return (up) stroke.



Reassembly

When reassembling the shock absorber, reverse the removal procedure. Note the following points:

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

Rear shock absorber: 30 Nm (3.0 m•kg, 22 ft•lb)

5 ELECTRICAL INSPECTION AND REPAIR

ELECTRICAL COMPONENTS 5-1

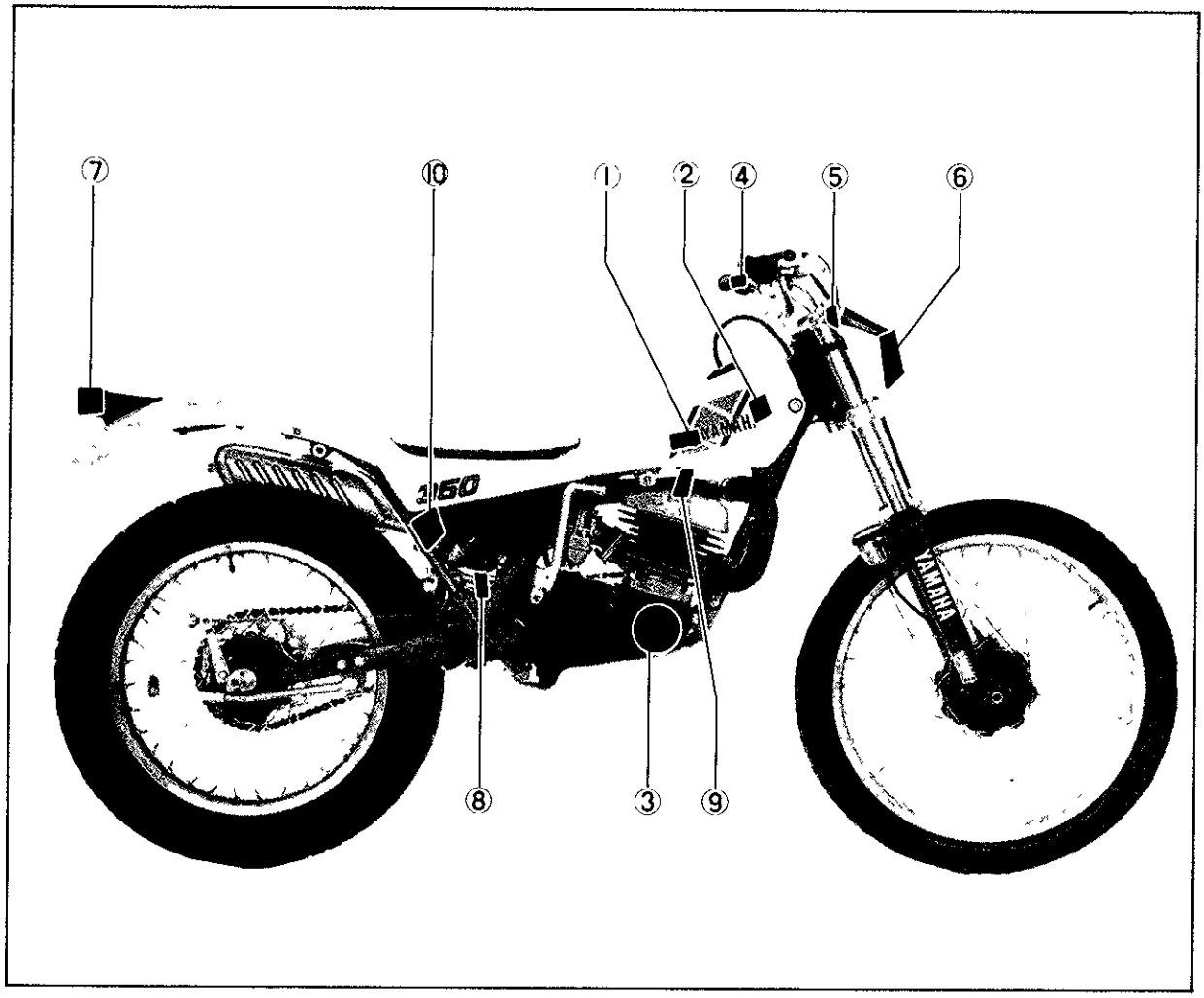
IGNITION SYSTEM 5-2
- TROUBLESHOOTING 5-2
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- "ENGINE STOP" SWITCH TEST 5-3
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- LIGHTING OUTPUT TEST 5-6
- LIGHTING COIL RESISTANCE TEST 5-6

5

ELECTRICAL INSPECTION AND REPAIR

ELECTRICAL COMPONENTS

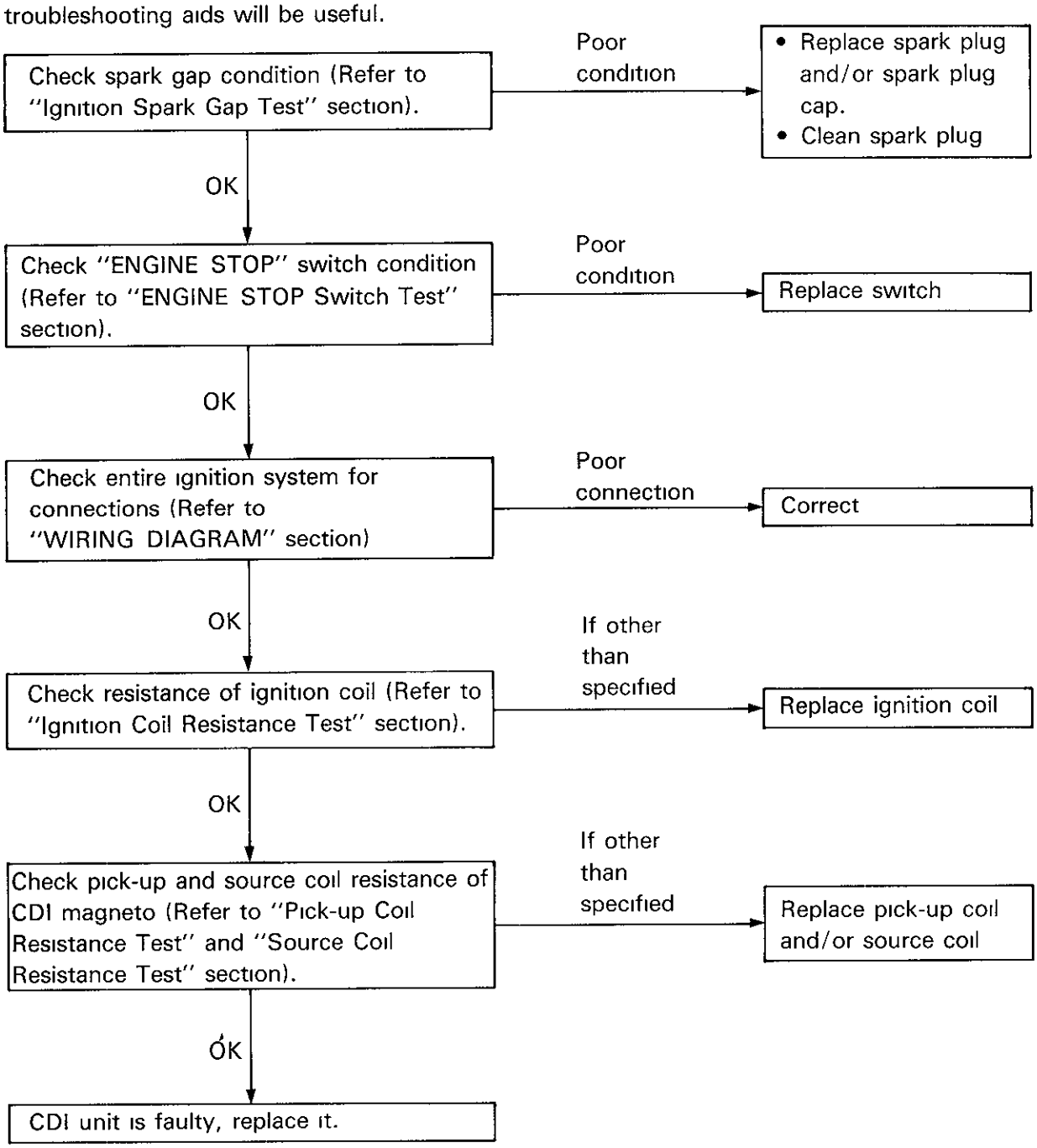


① Ignition coil
② C D.I. unit
③ C D I magneto
④ "ENGINE STOP" switch
⑤ "LIGHTS" switch
⑥ Headlight
⑦ Tail/brake light
⑧ Brake switch
⑨ Spark plug
⑩ Regulator

IGNITION SYSTEM

Troubleshooting

If the ignition system should become inoperative (No spark or intermittent spark), the troubleshooting aids will be useful.



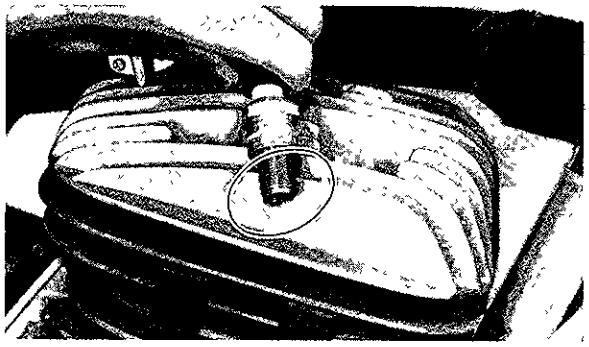
Ignition Spark Gap Test

1. Remove the spark plug, and ground the spark plug to the cylinder head.

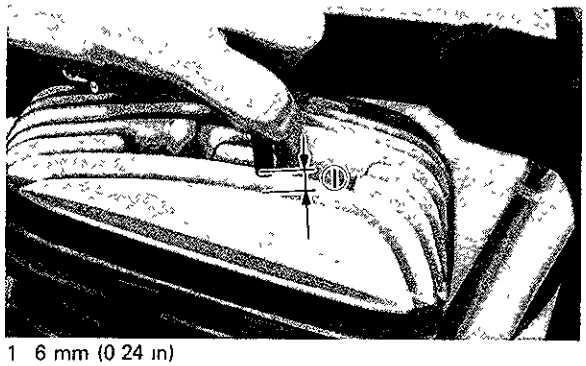
NOTE:

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

2. Kick the starter to check for sparks. If enough sparks are produced, the ignition system is good.
   If not, go to the next step.



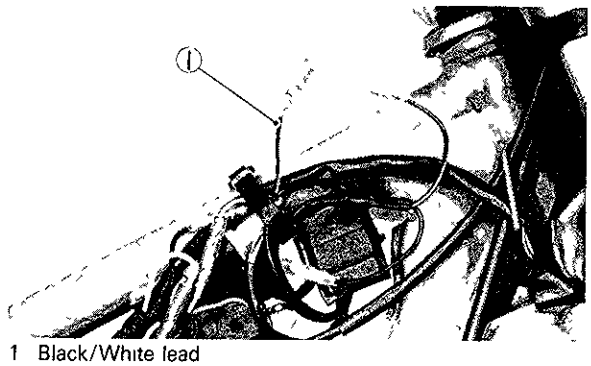
3. Remove the spark plug cap, and hold the high tension lead 6 mm (0.24 in) from the cylinder head.
4. Kick the starter to check for sparks. If enough sparks are produced, replace the spark plug and/or plug cap.
   If not, go to the next test.



1 6 mm (0 24 in)

"ENGINE STOP" Switch Test

1. Remove the seat and fuel tank.
2. Disconnect the "ENGINE STOP" switch lead (Black/White) at the CDI unit.

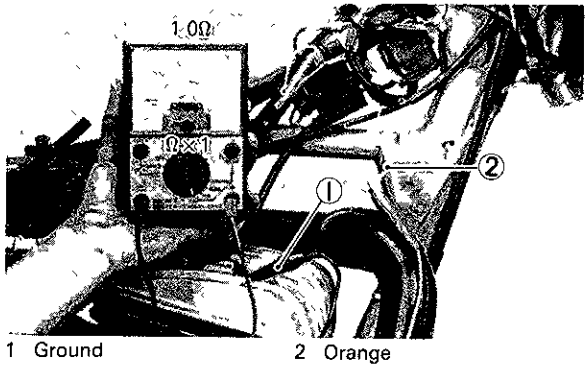


1 Black/White lead

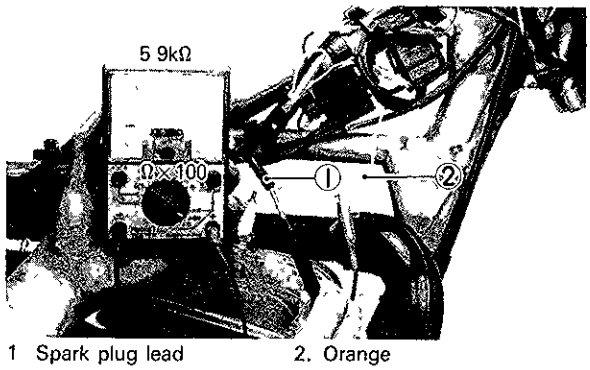
2 Start the engine. If engine is started, switch is shorted.
   If not, switch is good.

Ignition Coil Resistance Test

1 Remove the seat and fuel tank.
2. Disconnect the ignition coil leads from the wire harness and spark plug.
3. Connect the Pocket Tester as shown, and set the tester selector to "Ohm × 1" (For primary winding resistance check) or "Ohm × 100" (For secondary winding coil resistance check) position.



1 Ground 2 Orange



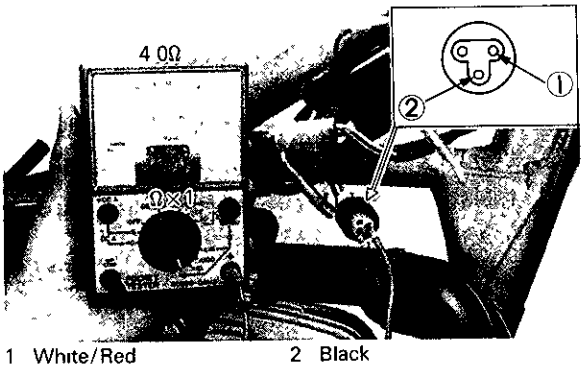
1 Spark plug lead 2. Orange

4. Check the resistance between terminals. If resistance are out of specifications, coil is broken. Replace the ignition coil.

Primary winding resistance: 1.0Ω ± 15% at 20°C (68°F) Secondary winding resistance: 5.9kΩ ± 15% at 20°C (68°F)

Pick-up Coil Resistance Test

1. Remove the seat and fuel tank.
2. Disconnect the 3-pin connector from the CDI magneto.
3. Connect the Pocket Tester as shown, and set the tester selector to "Ohm × 1" position.



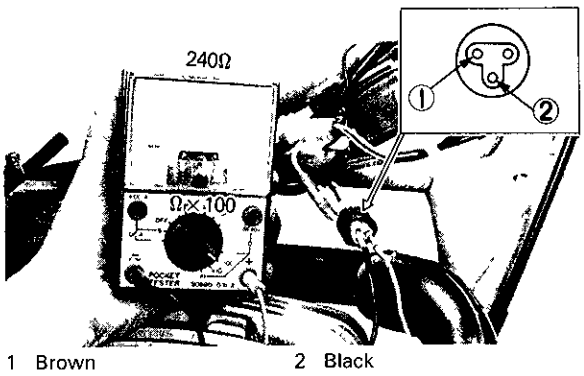
1 White/Red 2 Black

4. Check the resistance between terminals. If resistance is out of specification, coil is broken. Replace the pick-up coil assembly.

Pick-up coil resistance: 4.0Ω ± 10% at 20°C (68°F)

Source Coil Resistance Test

1. Remove the seat and fuel tank.
2. Disconnect the 3-pin connector from the CDI magneto.
3. Connect the pocket tester as shown, and set the tester selector to "Ohm × 100" position.



1 Brown 2 Black

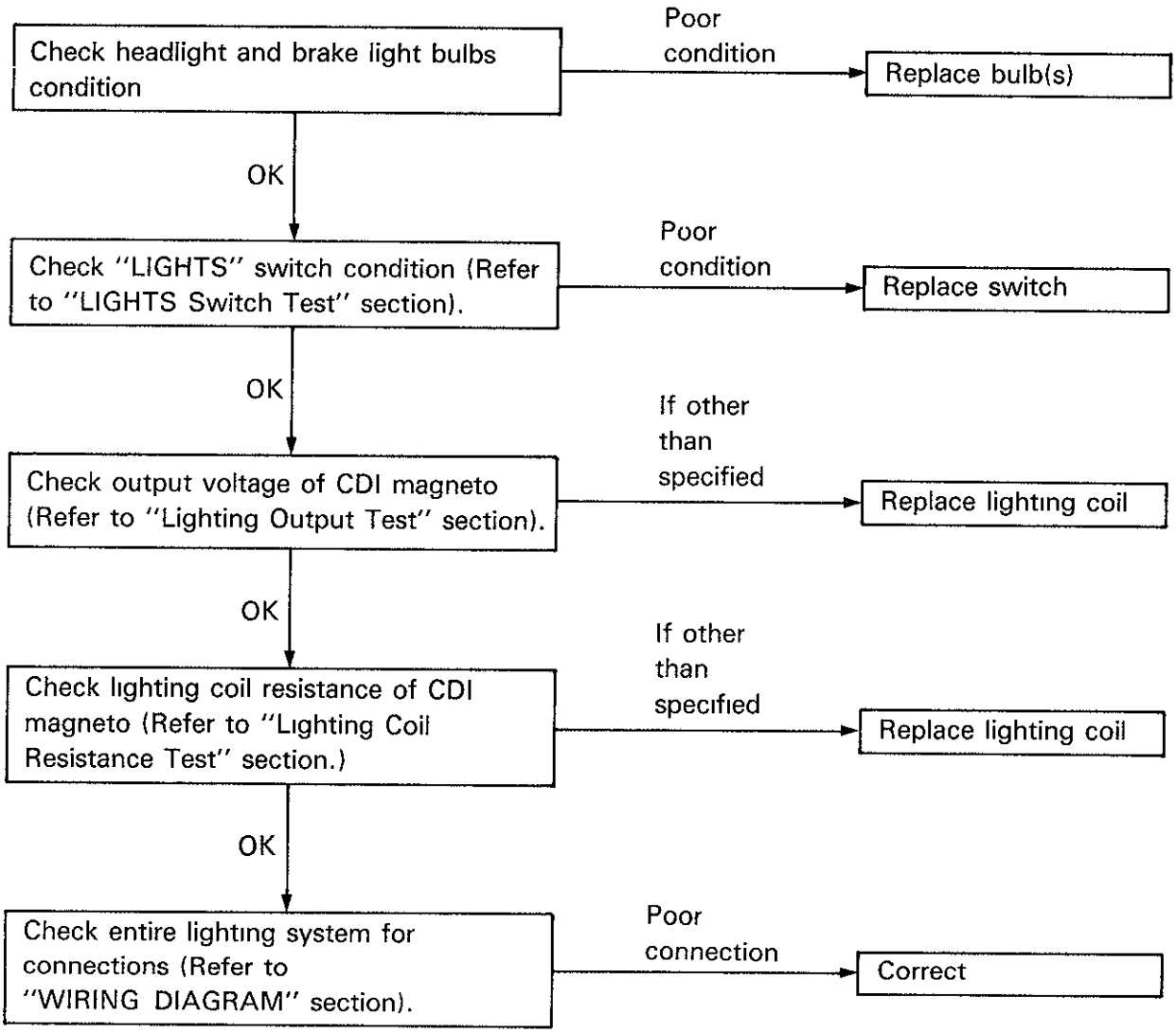
4. Check the resistance between terminals. If resistance is out of specification, coil is broken. Replace the source coil assembly.

Source coil resistance: 240Ω ± 10% at 20°C (68°F)

LIGHTING SYSTEM

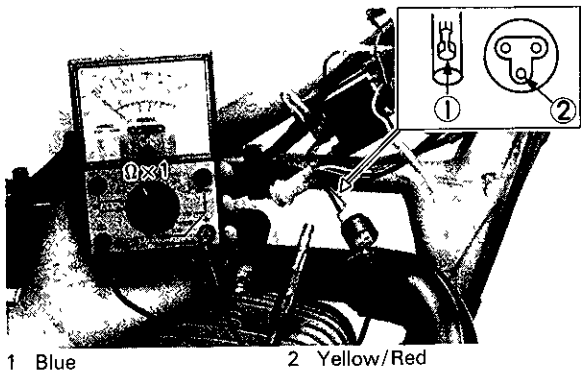
Troubleshooting

If the headlight or brake light will not come on, make checkup in the following sequence to determine the cause of trouble.



"LIGHTS" Switch Test

1. Disconnect the "LIGHTS" switch leads (Blue and Yellow/Red), and connect the Blue lead directly to the Yellow/Red lead.



1 Blue 2 Yellow/Red

2. Kick the starter to check for lights. If the headlight comes on, replace the switch. If not, go to the next test.

Lighting Output Test

1. Remove the headlight body assembly.
2. Disconnect the headlight leads from the wire harness.
3. Connect the Pocket Tester as shown, and set the tester selector to "AC 20V" position.
4. Start the engine.
5. Accelerate the engine to specifications and check the output voltage.

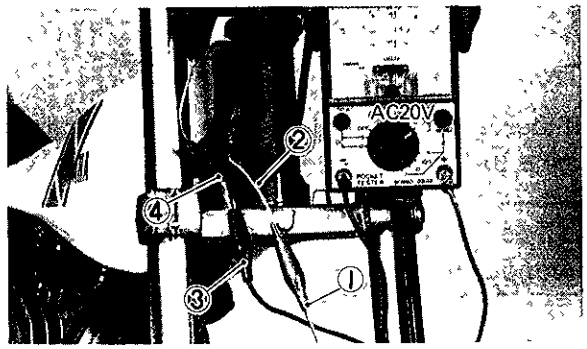
NOTE:

Use a tachometer for proper output voltage checking.

CAUTION:

Do not run the engine in neutral above 6,000 r/min for more than 1 or 2 seconds.

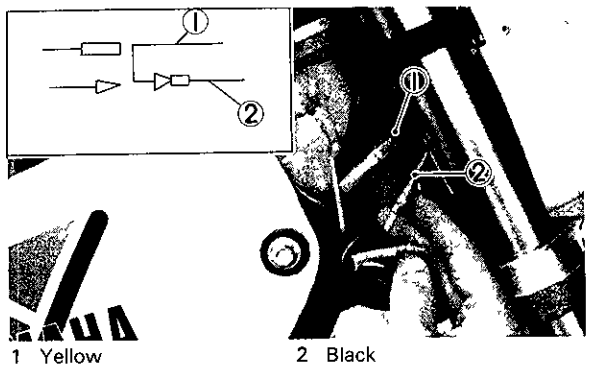
Lighting voltage:
5.5 V or more at 3,000 r/min
7.6 V or less at 8.000 r/min



1 Red 2 Yellow 3 Black 4 Black

Lighting coil Resistance Test

1. Remove the seat and fuel tank.
2. Disconnect the 3-pin connector from the CDI magneto.
3. Connect the Pocket Tester leads as shown, and set the teser selector to "Ohm × 1" position.



1 Yellow 2 Black

4. Check the resistance between terminals. If resistance is out of specification, coil is broken. Replace the lighting coil assembly.

Lighting coil resistance:
0.36Ω ± 10% at 20°C (68°F)

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DEFINITION OF UNITS 6-13

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WIRING DIAGRAM 6-16

6

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 (Pick-up 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 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 lead 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 petcock 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 worped.	• Replace
	2. Clutch lock nut 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 lock 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 bend. 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

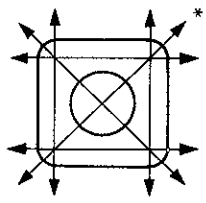
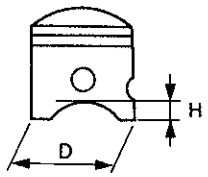
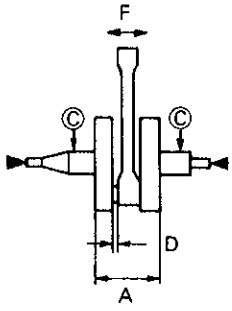
SPECIFICATIONS

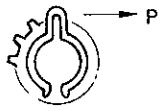
GENERAL SPECIFICATIONS

Item \ Model	TY350N	
Model Code Number	46Y	
Frame Serial Number	46Y-000101	
Engine Starting Number	46Y-000101	
Dimensions Overall Length Overall Width Overall Height Seat Height Wheelbase Minimum Ground Clearance	 2,025 mm (79 7 in) 805 mm (31 7 in) 1,085 mm (42.7 in) 745 mm (29.3 in) 1,320 mm (52 0 in) 325 mm (12 8 in)	
Basic Weight (With Oil and Fuel)	89 kg (196 lb)	
Engine Engine Type Induction System Cylinder Arrangement Displacement Bore × Stroke Compression Ratio Starting System	 Air-cooled 2-stroke, gasoline Reed valve Single cylinder, forward inclined 341 cm^3 80 × 68 mm (3.150 × 2.677 in) 5 3 1 Kick starter	
Lubrication System	Premix	
Premix Ratio/Engine Oil Type	50 1/Yamalube R	80 : 1/Castrol R30, A545, A747
Oil Type or Grade Transmission Oil Periodic Oil Change Total Amount	 SAE 10W30 type SE motor oil 0 75 L (0.66 Imp qt, 0 79 US qt) 0.80 L (0.70 Imp qt, 0.85 US qt)	
Air Filter	Wet type element	
Fuel Type Tank Capacity	 Premix, premixed gasoline 3 5 L (0 77 Imp gal, 0 93 US gal)	
Carburetor: Type/Quantity Manufacture	 Y26P/1 TEIKEI	
Spark Plug Type/Manufacture Gap	 BP6EV/NGK 0 7 ~ 0.8 mm (0 028 ~ 0 031 in)	
Clutch Type	Wet, multiple-disc	
Transmission Primary Reduction System Primary Reduction Ratio Secondary Reduction System Secondary Reduction Ratio Transmission Type Operation	 Gear 71/20 (3 550) Chain drive 42/12 (3 500) Constant mesh, 6-speed Left foot operation	

Item \ Model	TY350N
Gear Ratio 1st	39/13 (3.000)
2nd	37/15 (2.467)
3rd	31/16 (1 938)
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 (F)	2.75-21 (MICHELIN TRIAL)
Size (R)	4 00-18 (MICHELIN TRIAL)
Brake	
Front Brake Type	Drum brake (leading trailing)
Operation	Right hand operation
Rear Brake Type	Drum brake (leading trailing)
Operation	Right foot operation
Suspension.	
Front Suspension	Telescopic fork
Rear Suspension	Swingarm (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 1 in)
Rear Wheel Travel	160 mm (6 3 in)
Electrical·	
Ignition System	C D I
Generator System	Flywheel magneto
Headlight Type	Bulb type
Bulb Wattage/Quantity	
Headlight	6V, 25W/25W × 1
Tail/Brake Light	6V, 3W/10W × 1

MAINTENANCE SPECIFICATIONS
Engine

Item \ Model	TY350N
Cylinder Head. Warp Limit 	<0 05 mm (0.0020 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 (0.0020 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) 0 055~0.060 mm (0 0022~0.0024 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) Side Clearance 2nd Ring: Type Dimensions (B×T) End Gap (Installed) Side Clearance	 Plain 1.5×3 2 mm (0 059×0.130 in) 0.30~0 45 mm (0.012~0.018 in) 0.04~0 08 mm (0.0016~0.0032 in) Plain 1 5×3.2 mm (0.059×0.130 in) 0.30~0 45 mm (0.012~0.018 in) 0.03~0.07 mm (0.0012~0.0028 in)
Crankshaft:  Crank Width "A" Run Out Limit "C" Connecting Rod Big End Side Clearance "D" Small End Free Play "F" <Limit>	 65.95~66 00 mm (2.596~2.598 in) <0.03 mm (0.0012 in)> 0.25~0.75 mm (0.010~0 030 in) 0 4~1.0 mm (0 016~0.039 in) <2 mm (0.08 in)>
Clutch: Friction Plate Thickness/Quantity Wear Limit Clutch Plate Thickness/Quantity Warp Limit Clutch Spring Free Length/Quantity Clutch Spring Minimum Length	 2.9~3.1 mm (0.11~0.12 in)/6 pcs <2.7 mm (0.11 in)> 1 5~1 7 mm (0.059~0.067 in)/5 pcs <0 05 mm (0.002 in)> 31.9 mm (1.26 in)/6 pcs <29.9 mm (1 18 in)>

Item \ Model	TY350N
Clutch Housing Thrust Clearance Push Rod Bending Limit	0.17 ~ 0 23 mm (0 007 ~ 0 009 in) < 0 2 mm (0 008 in) >
Kick Starter Type Kick Clip Friction Type 	Kick and mesh type P = 0 8 ~ 1 2 kg (1 8 ~ 2 6 lb)
Air Filter Oil Grade (Oiled Filter)	Foam-air-filter oil or air cooled 2-stroke engine 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
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)	ø0 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 (0 240 ± 0 012 in)
Valve Bending Limit	0 6 mm (0 024 in)

Tightening Torque:

Parts name	Tightening torque		
	Nm	m•kg	ft•lb
Spark plug	25	2.5	18
Cylinder head	22	2.2	16
Cylinder	35	3.5	25
Exhaust pipe	15	1.5	11
Crankcase	12	1.2	8.7
Crankcase cover	10	1.0	7.2
Bearing plate cover	10	1.0	7.2
Bearing plate	10	1.0	7.2
Bearing holder	16	1 6	11
Drain bolt	20	2.0	14
Kick crank	59	5.9	43
Primary driven gear	75	7.5	54
Clutch push rod	10	1.0	7.2
Clutch spring	10	1.0	7.2
Drive sprocket	75	7.5	54
Stopper lever	14	1.4	10
Change pedal	10	1.0	7.2
Stator set screw	I8	0.8	5 8
CDI magneto	I85	8 5	61

Chassis

Item \ Model	TY350N
Steering System	
Steering Bearing Type	Taper roller bearing
Lock to Lock Angle (Left)	68°
(Right)	68°
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)
Collor Length	80 mm (3 15 in)
Spring Rate/Stroke	K_1 = 2 697 N/mm (0 275 kg/mm, 15 39 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	299 cm^3 (10 5 Imp oz, 10 1 US oz)/99 mm (3 9 in) (From top of inner tube fully compressed without spring)
Oil Grade	SAE 10W30 type SE motor oil
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 ~ 73 mm (0 ~ 2 87 in)
Enclosed Gas Pressure	1,471 kPa (15 kg/cm^2, 213 3 psi)
Rear Arm·	
Swingarm Free Play Limit	
End	< 2 0 mm (0 08 in) >
Side	< 1 0 mm (0.04 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	
Vertical	< 2 0 mm (0 08 in) >
Lateral	< 2 0 mm (0 08 in) >
Drive Chain.	
Type/Manufacturer	520DS/DAIDO
Number of Links	95 links + Joint
Chain Free Play	20 ~ 30 mm (0 8 ~ 1 2 in)
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) >

Item \ Model	TY350N
Lining Thickness <Limit> Shoe Spring Free Length Front/Rear	4 mm (0.16 in) <2 mm (0.08 in)> 36 5 mm (1 44 in)/34 5 mm (1.36 in)
Brake Lever & Brake Pedal Brake Lever Free Play/Position Brake Pedal Free Play	 5~8 mm (0 2~0 3 in) at lever pivot 10~15 mm (0 4~0 6 in) (Vertical height below footrest top)
Clutch Lever Free Play/Position	2~3 mm (0.08~0 12 in)/at lever pivot

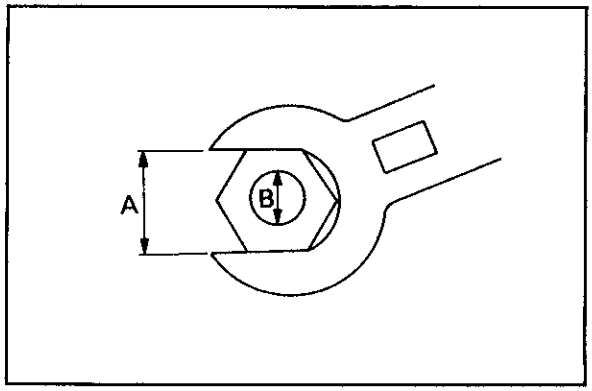
Parts name	Tightening torque		
	Nm	m•kg	ft•lb
Front wheel axle	58	5.8	42
Handle crown and inner tube	23	2 3	17
Handle crown and steering shaft	53	5 3	38
Handle crown and handlebar holder	23	2.3	17
Steering fitting nut	10	1 0	7.2
Engine bracket and frame	30	3.0	22
Rear wheel axle	85	8.5	61
Sprocket wheel	30	3.0	22
Front fork and axle holder	20	2.0	14
Rear shock absorber and frame	30	3 0	22
Pivot shaft and frame	85	8.5	61
Brake cam lever	10	1.0	7 2
Relay arm and bracket relay	32	3 2	23
Relay arm and rear shock absorber	30	3.0	22
Relay arm and connecting rod	32	3.2	23
Swing arm and connecting rod	58	5.8	42
Bracket relay and frame	30	3 0	22

Electrical

Item \ Model	TY350N
Voltage	6V
Ignition System· , Ignition Timing (B.T.D C.) Advancer Type	 12°/2,500 r/min B T D C 2.8 mm (0 11 in) Electrical
C.D I Magneto-Model/Manufacturer Pick-up Coil Resistance (Color) Source Coil Resistance (Color) C.D.I. Unit-Model/Manufacturer	 F3T37372/MITSUBISHI 4 0Ω±10% at 20°C (68°F) (Red — Black) 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)
Charging System Lighting Coil Resistance (Color) Lighting Voltage Min Max	 ±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	 Semi cnductor short circuit type TS6HRY-L/MITSUBISHI
Circuit Breaker Type	 Fuse

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.



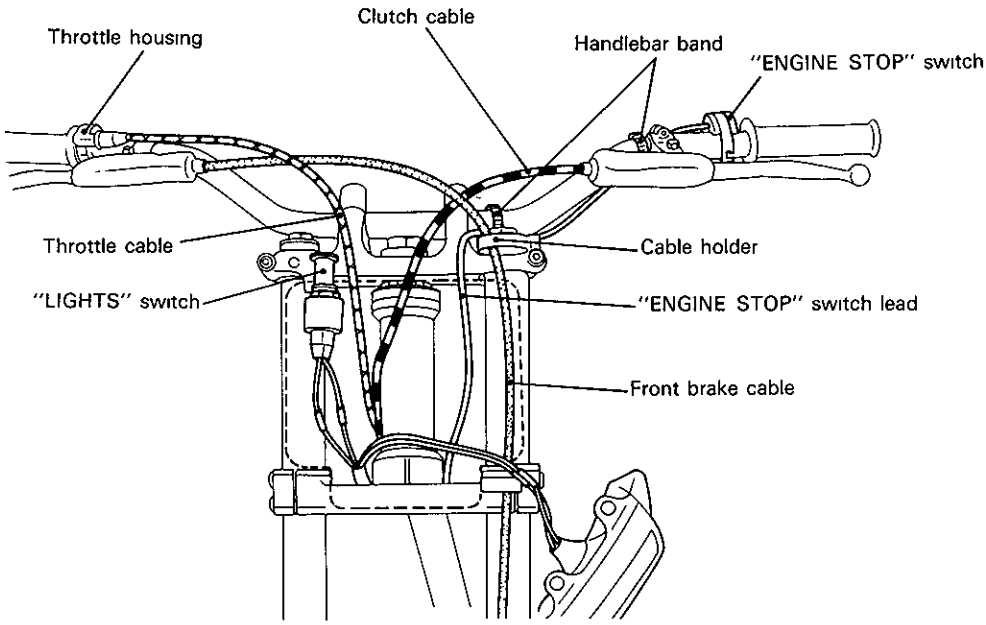
A· Distance across flats
B. Outside thread diameter

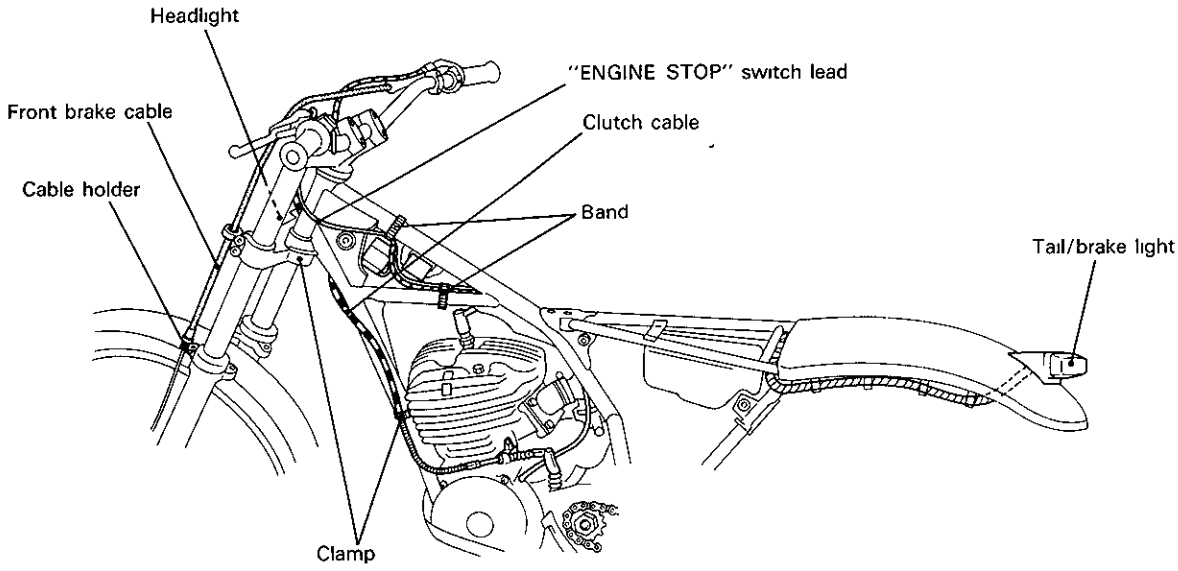
A (Nut)	B (Bolt)	General torque specifications		
		Nm	m•kg	ft•lb
10 mm	6 mm	6	0 6	4.5
12 mm	8 mm	15	1.5	11
14 mm	10 mm	30	3 0	22
17 mm	12 mm	55	5 5	40
19 mm	14 mm	85	8.5	61
22 mm	16 mm	130	13.0	94

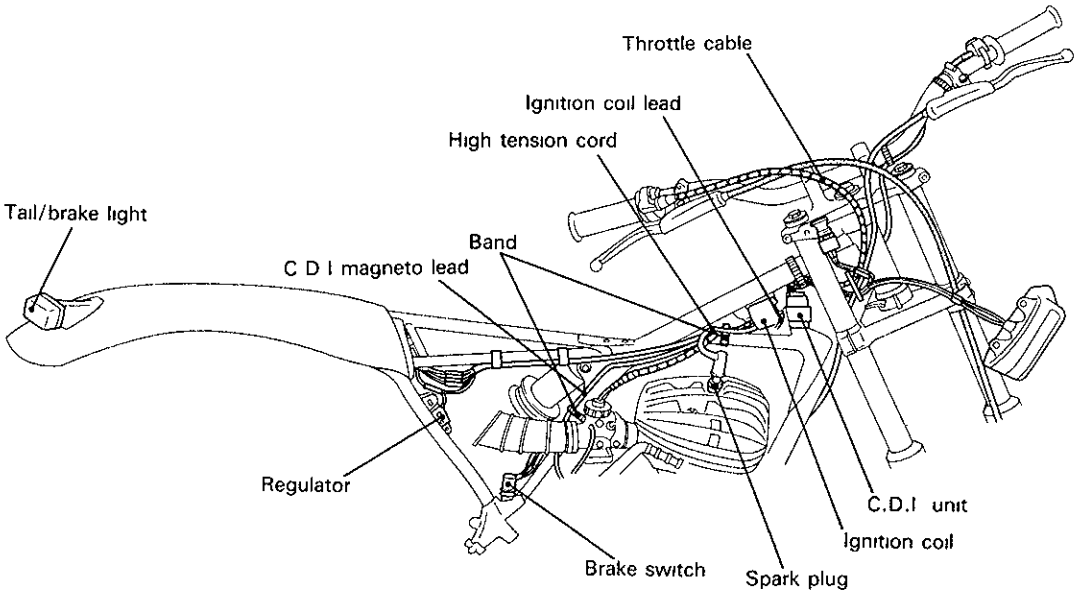
DEFINITION OF UNITS

Unit	Read	Definition	Measure
mm cm	milimeter centimeter	10^{-3} meter 10^{-2}meter	Length Length
kg	kilogram	10^{3}gram	Weight
N	Newton	1 kg × m/sec^{2}	Force
Nm m · kg	Newton meter Meter kilogram	N × m m × kg	Torque Torque
Pa N/mm	Pascal Newton per milimeter	N/m^{2} N/mm	Pressure Spring rate
L cm^{3}	Liter Cubic centimeter		Volume or Capacity
r/min	Rotation per minute		Engine Speed

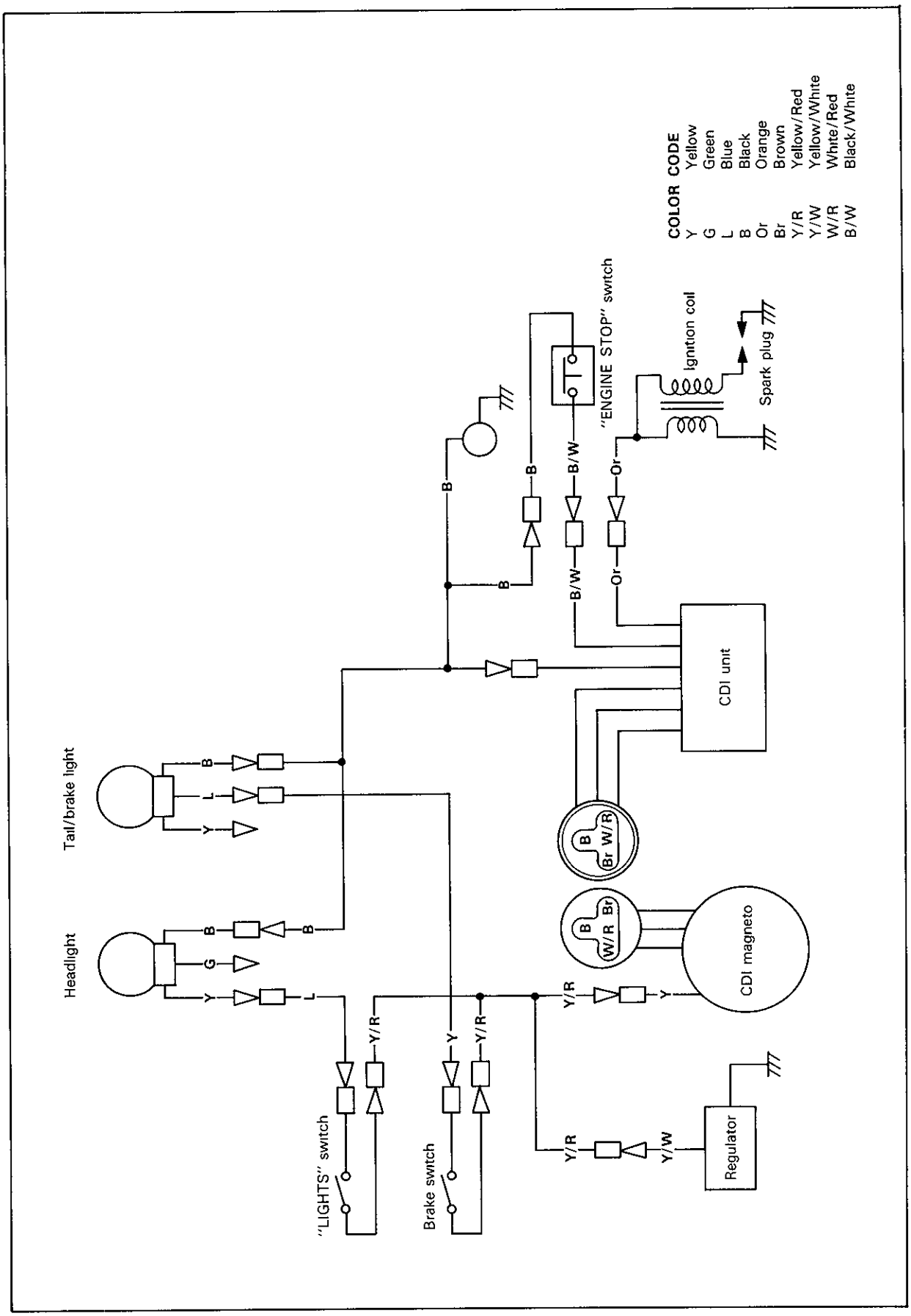
CABLE ROUTING






Throttle cable
Ignition coil lead
High tension cord
Tail/brake light
Band
C D I magneto lead
Regulator
C.D.I unit
Ignition coil
Brake switch
Spark plug

WIRING DIAGRAM



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