YAMAHA

SRX250

SERVICE MANUAL

SRX250
SERVICE MANUAL
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NOTICE

This manual was written by the Yamaha Motor Company primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to put an entire mechanic's education into one manual, so it is assumed that persons using this book to perform maintenance and repairs on Yamaha motorcycles have a basic understanding of the mechanical concepts and procedures inherent in motorcycle repair technology. Without such knowledge, attempted repairs or service to this model may render it unfit to use and/or unsafe.

Yamaha Motor Company, Ltd. is continually striving to improve all models manufactured by Yamaha. Modifications and significant changes in specifications or procedures will be forwarded to all Authorized Yamaha dealers and will, where applicable, appear in future editions of this manual.

TECHNICAL PUBLICATIONS
SERVICE DIVISION
MOTORCYCLE OPERATIONS
YAMAHA MOTOR CO., LTD

HOW TO USE THIS MANUAL

PARTICULARLY IMPORTANT INFORMATION

This material is distinguished by the following notation.

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 motorcycle.

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

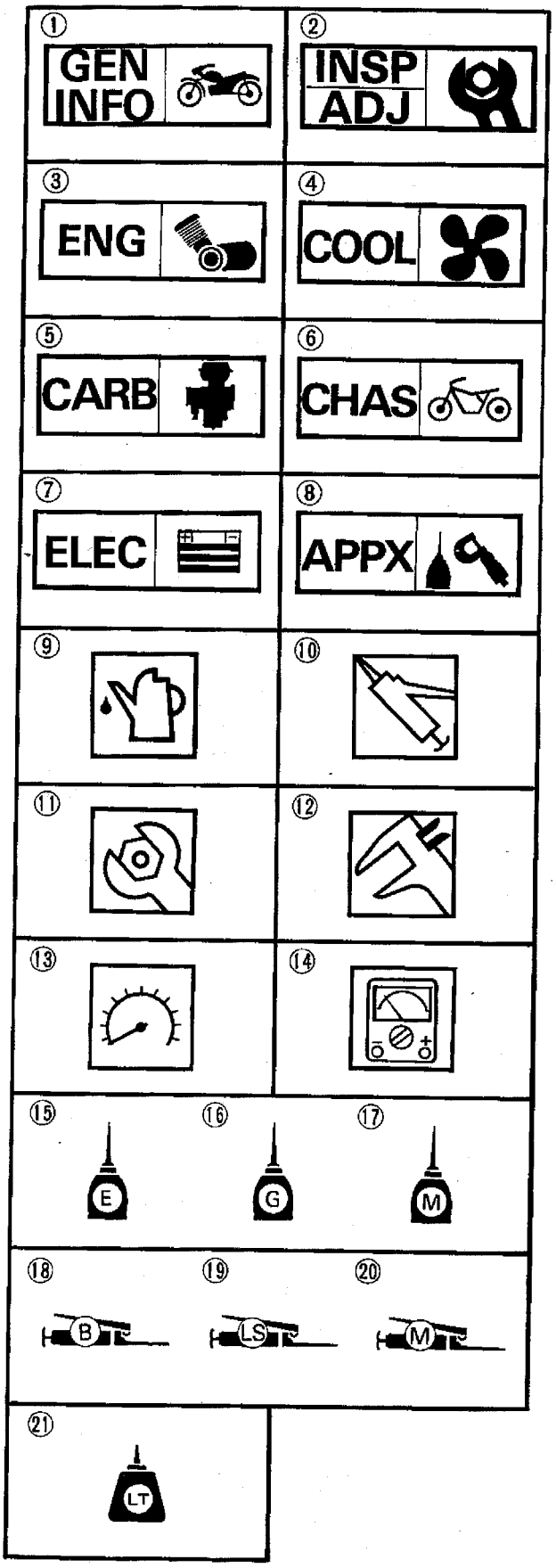
MANUAL FORMAT

All of the procedures in this manual are organized in a sequential, step-by-step format. The information has been compiled to provide the mechanic with an easy to read, handy reference that contains comprehensive explanations of all disassembly, repair, assembly, and inspection operations.
In this revised format, the condition of a faulty component will precede an arrow symbol and the course of action required will follow the symbol, e.g.,

- Bearings
  Pitting/Damage→Replace.

EXPLODED DIAGRAM

Each chapter provides exploded diagrams before each disassembly section for ease in identifying correct disassembly and assembly procedures.



ILLUSTRATED SYMBOLS (Refer to the illustration)

Illustrated symbols ① to ⑧ are designed as thumb tabs to indicate the chapter's number and content.

① General information
② Periodic inspection and adjustment
③ Engine
④ Cooling system
⑤ Carburetion
⑥ Chassis
⑦ Electrical
⑧ Appendices

Illustrated symbols ⑨ to ⑭ are used to identify the specifications appearing in the text.

⑨ Filling fluid
⑩ Lubricant
⑪ Tightening
⑫ Wear limit, clearance
⑬ Engine speed
⑭ Ω, V, A

Illustrated symbols ⑮ to ㉑ in the exploded diagram indicate grade of lubricant and location of lubrication point.

⑮ Apply engine oil
⑯ Apply gear oil
⑰ Apply molybdenum disulfide oil
⑱ Apply wheel bearing grease
⑲ Apply lightweight lithium-soap base grease
⑳ Apply molybdenum disulfide grease
㉑ Apply locking agent (LOCTITE®)

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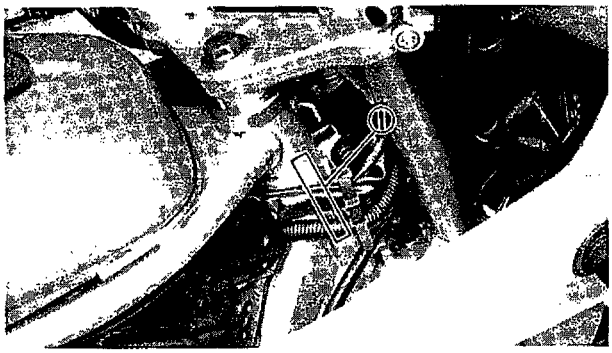
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ENGINE OVERHAUL	ENG 3
CARBURETION	CARB 4
CHASSIS	CHAS 5
ELECTRICAL	ELEC 6
APPENDICES	APPX 7

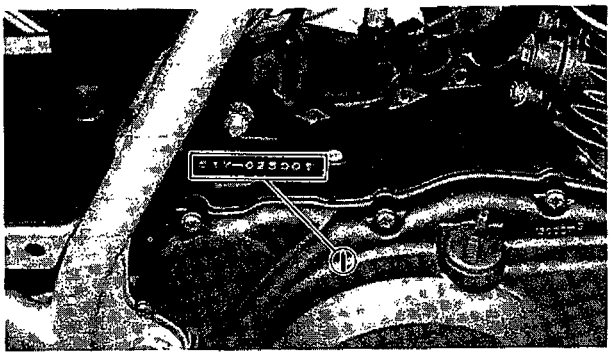
CHAPTER 1.
GENERAL INFORMATION

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ENGINE SERIAL NUMBER 1-1

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GENERAL INFORMATION

MOTORCYCLE IDENTIFICATION

FRAME SERIAL NUMBER

The frame serial number ① is stamped into the right side of the steering head pipe.

ENGINE SERIAL NUMBER

The engine serial number ① is stamped into the right side of the engine.

NOTE:

The first three digits of these numbers are for model identifications; the remaining digits are the unit production number.

Starting Serial Number:	
SRX250	56K-000101

NOTE:

Designs and specifications are subject to change without notice.

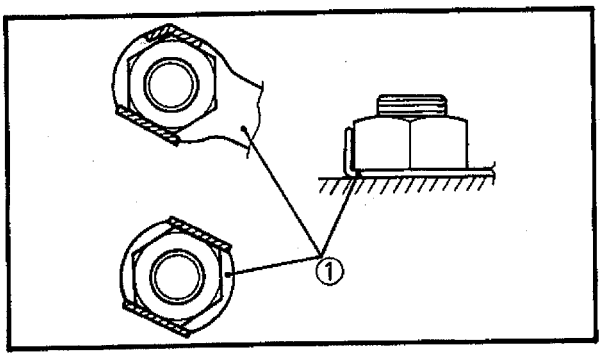
IMPORTANT INFORMATION

ALL REPLACEMENT PARTS

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

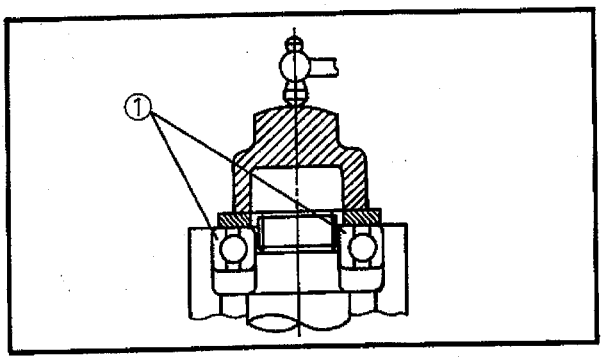
GASKETS, OIL SEALS, AND O-RINGS

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



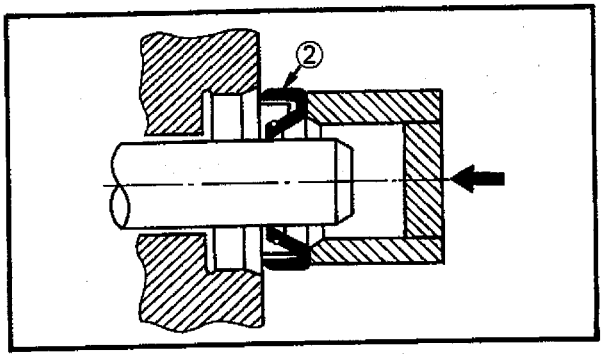
LOCK WASHERS/PLATES AND COTTER PINS

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



BEARINGS AND OIL SEALS

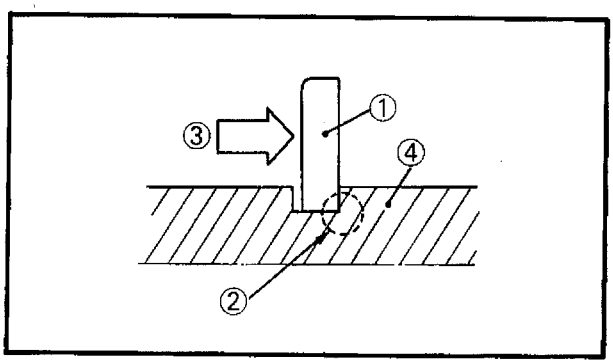
1. Install the bearing(s) ① and oil seal(s) ② with their manufacturer's marks or numbers facing outward. (In other words, the stamped letters must be on the side exposed to view.) When installing oil seal(s), apply a light coating of light-weight lithium base grease to the seal lip(s). Oil the bearings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



CAUTION:

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

SPECIAL TOOLS



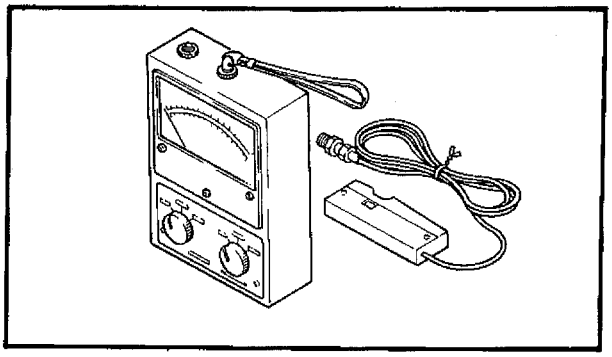
CIRCLIPS

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

④ Shaft

SPECIAL TOOLS

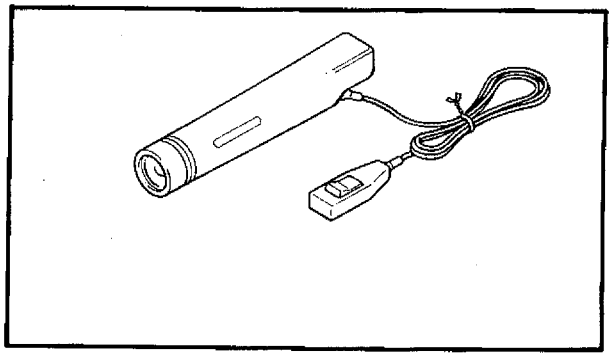
The proper special tools are necessary for complete and accurate tune-up and assembly. Using the correct special tool will help prevent damage caused by the use of improper tools or improvised techniques.



FOR TUNE UP

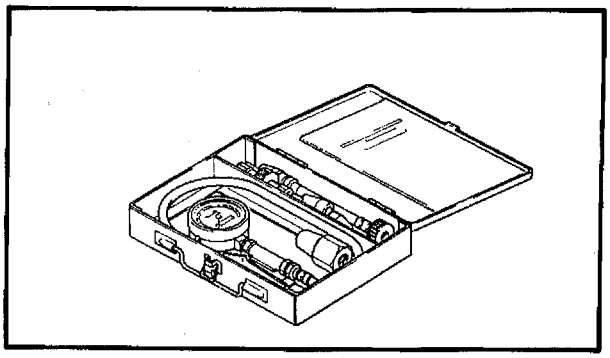
1. Inductive Tachometer
   P/N. 90890-03113

This tool is needed for detecting engine rpm.



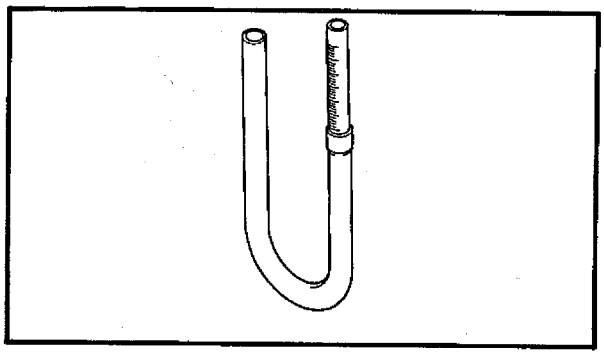
2. Inductive Timing Light
   P/N. 90890-03109

This tool is necessary for checking ignition timing.



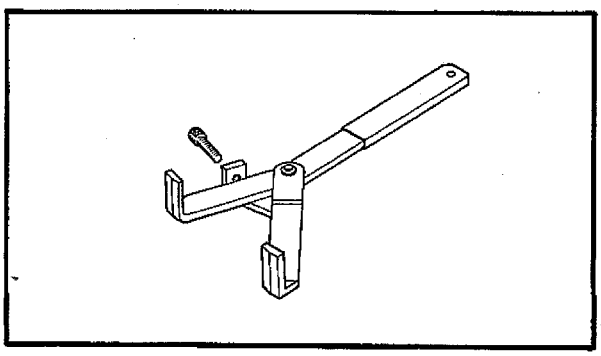
3. Compression Gauge
   P/N. 90890-03081

This gauge is used to measure the engine compression.



4. Fuel Level Gauge
P/N. 90890-01312

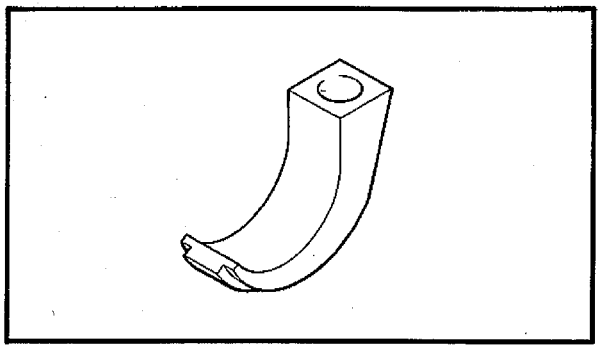
This gauge is used to measure the fuel level in the float chamber.



FOR ENGINE SERVICE

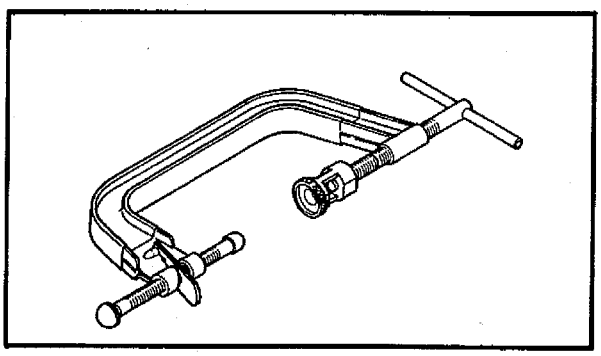
1. Universal Clutch Holder
P/N. 90890-04086

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



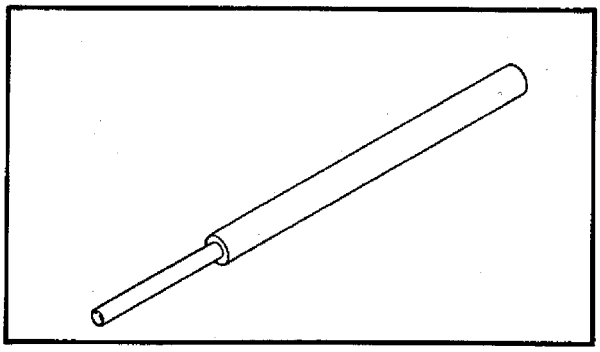
2. Tappet Adjusting Tool
P/N. 90890-04106

This tool is necessary to replace valve adjusting pads.



3. Valve Spring Compressor
P/N. 90890-04019

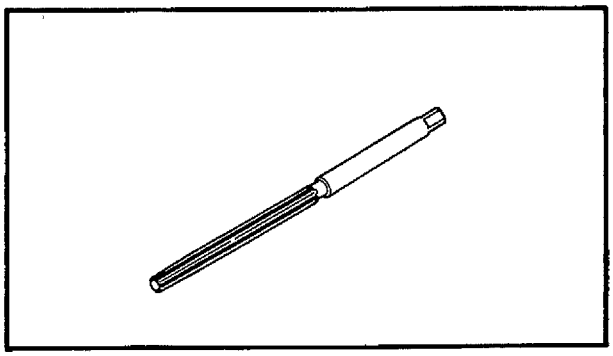
This tool is needed to remove and install the valve assemblies.



4. Valve Guide Remover (5.5 mm)
P/N. 90890-01122

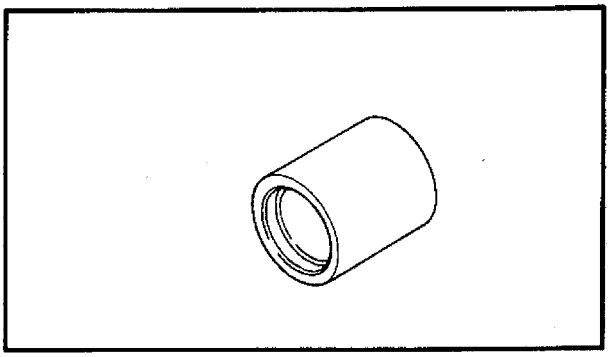
This tool is used to remove the valve guides.

SPECIAL TOOLS



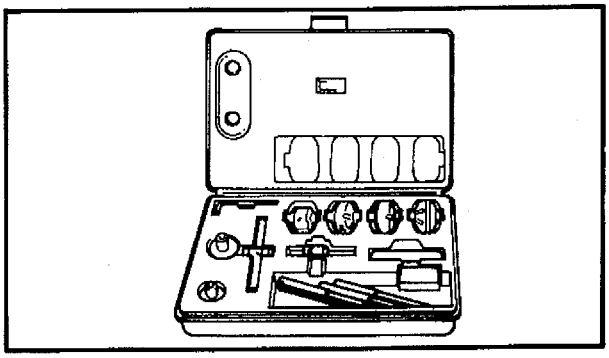
5. Valve Guide Reamer (5.5 mm)
   P/N. 90890-01196

This tool is used to rebore the new valve guide.



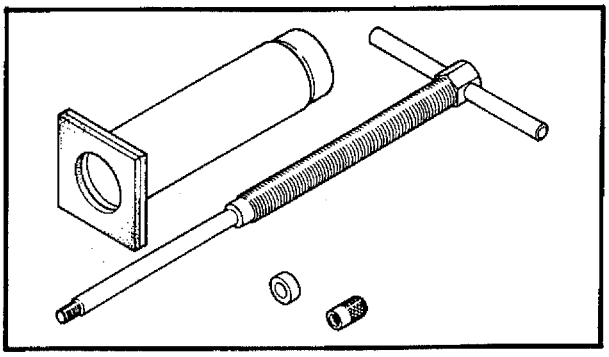
6. Valve Guide Installer
   P/N. 90890-04015

This tool is needed to install the valve guides properly.



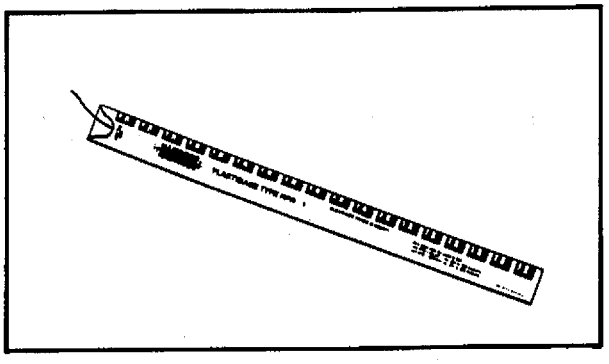
7. Valve Seat Cutter Set
   P/N. YM-91043

This tool is needed to resurface the valve seat.



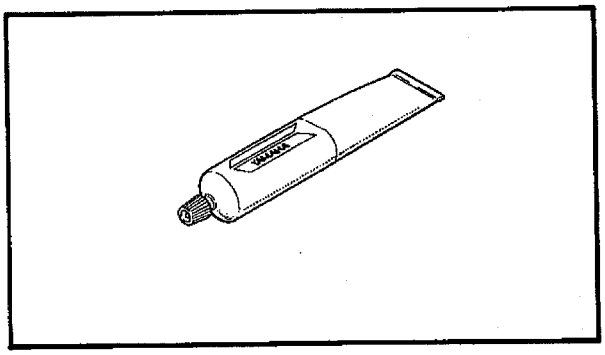
8. Piston Pin Puller
   P/N. 90890-01304

This tool is used to remove the piston pin.



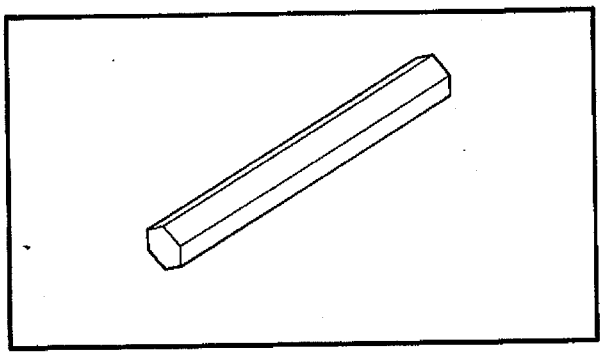
9. Plastigage® Set "Green"
   P/N. YU-33210

This gauge is needed to measure the clearance for the connecting rod bearing.



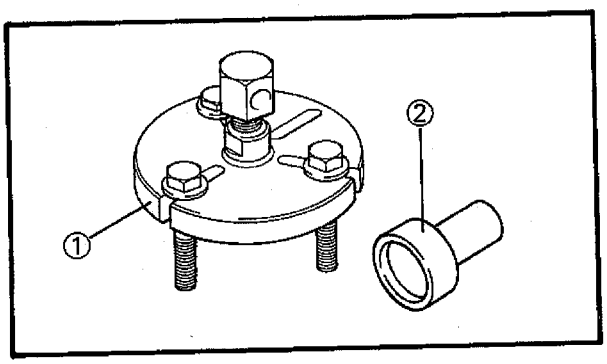
10. Yamaha Bond No. 1215
P/N. 90890-85505

This sealant (bond) is used for crankcase mating surfaces, etc.



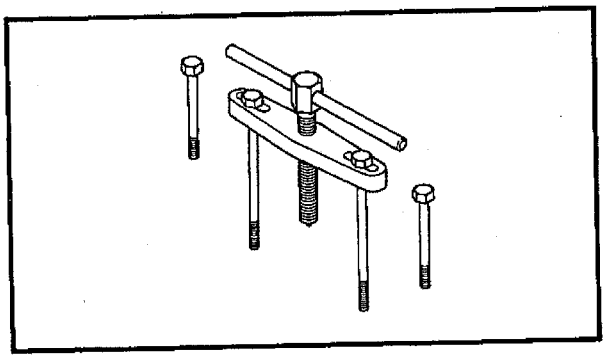
11. Wrench Adapter 8 mm (0.3 in)
P/N. 90890-04076

This tool is used to retighten the cylinder head securing bolts.



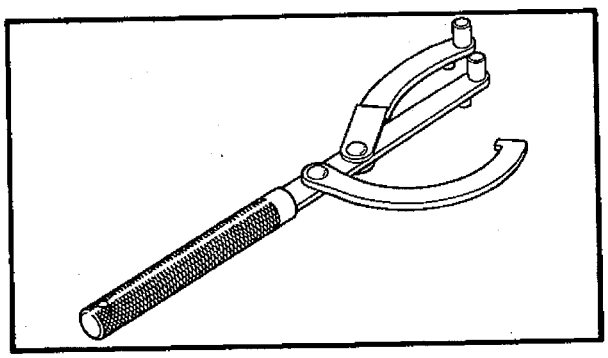
12. Flywheel Puller Set
P/N. 90890-01362 ..... ①
Flywheel Puller Attachment
P/N. 90890-01382 ..... ②

These tools are used for removing the flywheel.



13. Crankcase-Separator
P/N. 90890-01135

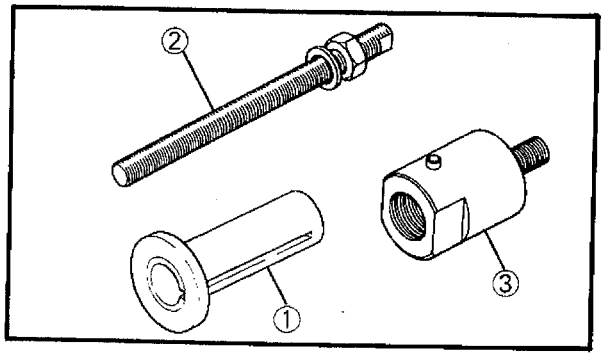
This tool is used for removing the crankshaft from the crankcase.



14. Universal Magneto & Rotor Holder
P/N. 90890-01235

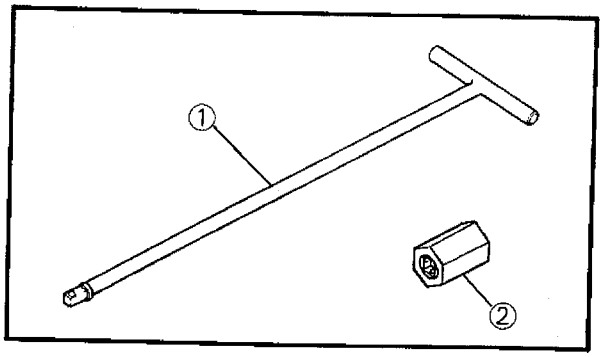
This tool is used when loosening or tightening the flywheel magneto securing bolt.

SPECIAL TOOLS



15. Crankshaft Ins
Pot
P/N. 90890-01
Bolt
P/N. 90890-01
Adapter
P/N. 90890-01

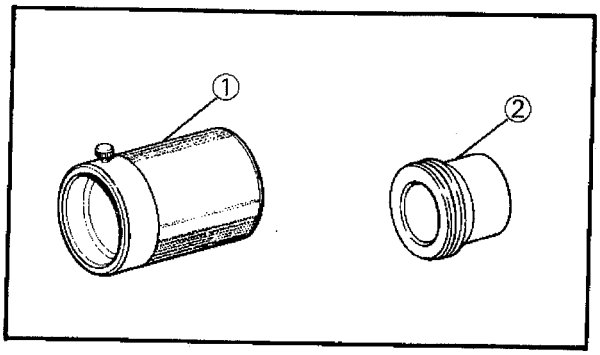
These tools are used



FOR CHASSIS S

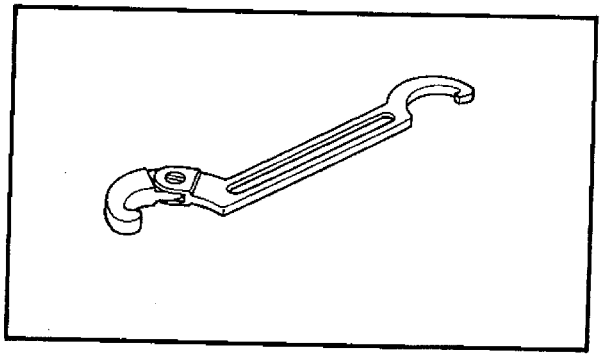
1. T-Handle
P/N. 90890-013
Front Fork Cylin
P/N. 90890-040

This tool is used to lo
cylinder holding bolt.



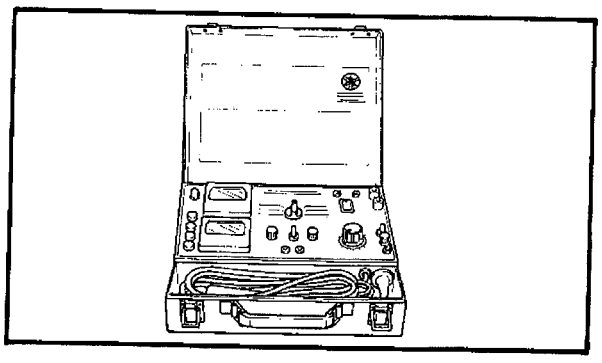
2. Front Fork Seal
P/N. 90890-013
Adapter (33 mm
P/N. 90890-013

These tools are used



3. Ring Nut Wrenc
P/N. 90890-012

This tool is used to loos
nut.



FOR ELECTRICAL

1. Electro Tester
P/N. 90890-0302

This instrument is nece
system components.

GEN INFO

CHAPTER 2.
PERIODIC INSPECTIONS AND ADJUSTMENTS

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PERIODIC INSPECTIONS AND ADJUSTMENTS

INTRODUCTION

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

PERIODIC MAINTENANCE/LUBRICATION INTERVALS

Unit: km (miles)

ITEM	REMARKS	BREAK-IN 1,000 (600)	EVERY	
			6,000 (4,000) or 6 months	12,000 (8,000) or 12 months
Valve(s)	Check valve clearance. Adjust if necessary.	O	O	O
Spark plug(s)	Check condition. Clean or replace if necessary.	O	O	O
Air filter	Clean. Replace if necessary.		O	O
Carburetor*	Check idle speed(/synchronization)/starter operation. Adjust if necessary.	O	O	O
Fuel line*	Check fuel hose (and vacuum pipe) for cracks or damage. Replace if necessary.		O	O
Engine oil filter*/ oil strainer	Replace filter element and clean oil strainer	O	O	O
Engine oil	Replace. (Warm engine before draining)	O	O	O
Brake* (for disc brake)	Check operation/fluid leakage/See NOTE. Correct if necessary.		O	O
Brake* (for drum brake)	Check operation. Adjust if necessary.		O	O
Clutch	Check operation. Adjust if necessary.		O	O
Rear arm pivot*	Check rear arm assembly for looseness. Correct if necessary. Moderately repack every 24,000 (16,000) or 24 months.**			O
Rear suspension link pivots*	Check operation. Apply grease lightly every 24,000 (16,000) or 24 months.**			O
Wheels* (for cast wheel)	Check balance/damage/runout. Repair if necessary.		O	O
Wheel bearings*	Check bearings assembly for looseness/ damage. Replace if damaged.		O	O
Steering bearing*	Check bearings assembly for looseness. Correct if necessary. Moderately repack every 24,000 (16,000) or 24 months.**	O		O
Front forks*	Check operation/oil leakage. Repair if necessary.		O	O

PERIODIC MAINTENANCE/LUBRICATION

INSP ADJ

ITEM	REMARKS	BREAK-IN 1,000 (600)	EVERY 6,000 (4,000) or 6 months	EVERY 12,000 (8,000) or 12 months
Rear shock absorber*	Check operation/oil leakage. Repair if necessary.		O	O
Drive chain	Check chain slack/alignment. Adjust if necessary. Clean and lube.	EVERY 500 (300)		
Fittings/ Fasteners*	Check all chassis fittings and fasteners. Correct if necessary.	O	O	O
(Center and) sidestand*	Check operation. Repair if necessary.	O	O	O
Battery*	Check specific gravity. Check breather pipe for proper operation. Correct if necessary.		O	O

*: It is recommended that these items be serviced by a Yamaha dealer.
**: Medium weight wheel bearing grease. (bearing type)

NOTE:

Brake fluid replacement:

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

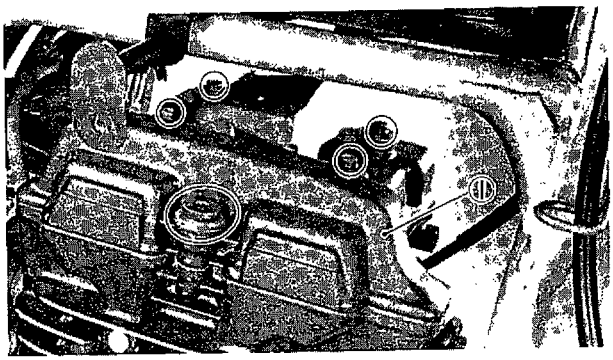
VALVE CLEARANCE ADJUSTMENT

ENGINE

VALVE CLEARANCE ADJUSTMENT

Removal

1. Remove:
   - Cowling
     (Reter to Engine Removal)



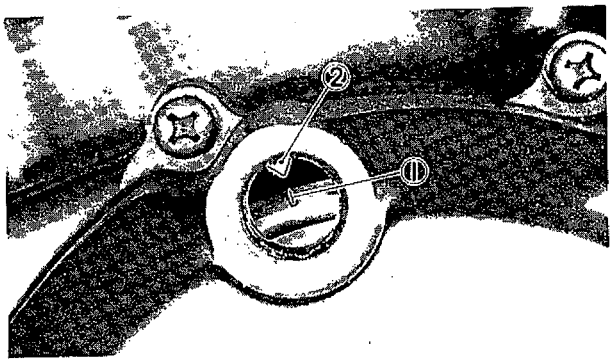
2. Disconnect:
   - Spark plug cap
3. Remove:
   - Spark plug
   - Cylinder head cover ①

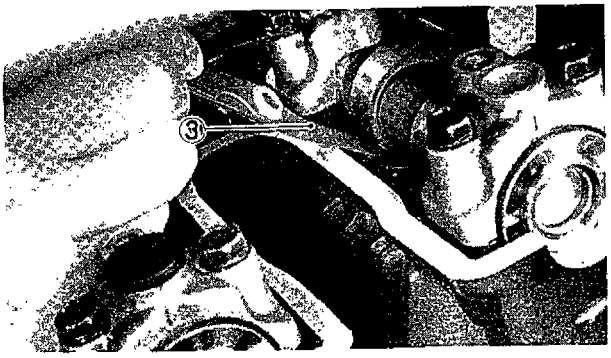
Inspection and Adjustment

1. Measure:
   - Valve clearance

NOTE:

Be sure piston is at Top Dead Center (TDC) on compression stroke when measuring clearance.





Valve clearance measurement steps:

NOTE:

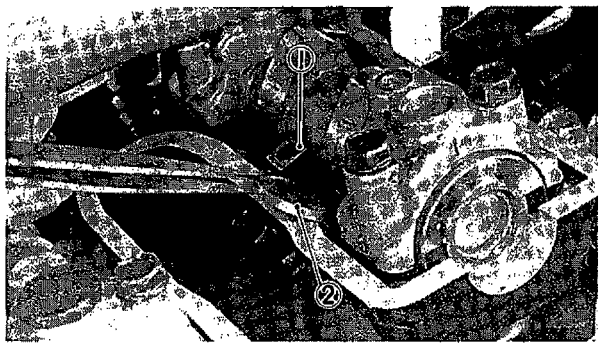
Valve clearance must be measured when the engine is cool to the touch.

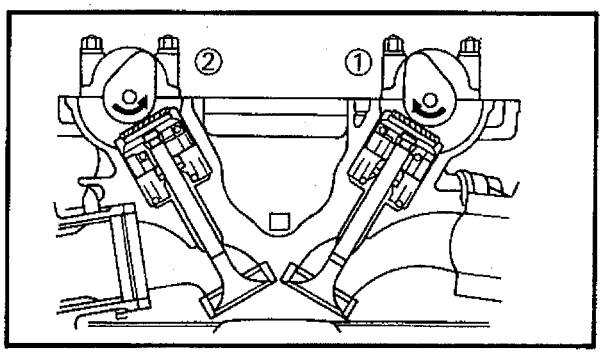
- Turn the crankshaft counterclockwise to align the "I" mark ① on the rotor with the stationary pointer ② when the piston is at TDC on the compression stroke.
- Measure the valve clearance using a Feeler Gauge ③.
- Record the measured amount if the clearance is incorrect.

Intake Valve (cold):
0.08 ~ 0.12 mm
(0.003 ~ 0.005 in)
Exhaust Valve (cold):
0.10 ~ 0.14 mm
(0.00394 ~ 0.00551 in)

2. Adjust:
   • Valve clearance

Valve clearance adjustment steps:
- Position the valve lifter slots (intake and exhaust side) facing each other.
- Depress the valve lifter and install the Tapet Adjusting Tool (90890-04106) onto the cylinder head.
- Turn the camshaft until the lobe of the Tappet Adjusting Tool ① depresses the valve lifter.
- Remove the pads ② from the lifter. Use a small screwdriver and a magnetic rod for removal.
  Note pad numbers.



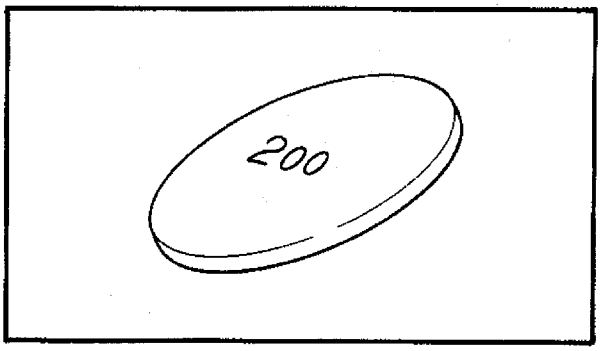


CAUTION

Turn the camshaft as follows:
(view from left side of the motorcycle)
Intake ①: Carefully rotate CLOCKWISE.
Exhaust ②: Carefully rotate COUNTER-CLOCKWISE.

- Select the proper valve adjusting pad from the chart below:

Pad range		Pad Availability: 25 increments
No. 200 ~ No. 320	2.00 mm (0.079 in) 3.20 mm (0.130 in)	Pads stepped in 0.05 mm (0.002 in) increments



VALVE CLEARANCE ADJUSTMENT

NOTE:
The thickness of each pads is marked on the pad face that contacts the valve lifter (not the cam)

- Round off the hundredths digit of the original pad number to the nearest 0.05 mm (0.002 in) increment.

Hundredths digit	Rounded valve
0 or 2	0
5	(NOT ROUNDED OFF)
8	10

EXAMPLE:
Original pad number = 258 (2.58 mm)
Rounded off digit = 260

NOTE:
Pads can only be selected in 0.05 mm (0.002 in) increments.

- Locate the "Installed Pad Number" on the chart, and then find the measured valve clearance. The point where these coordinates intersect is the new pad number.

NOTE:
Use the new pad number as a guide only as the number must be verified.

Pad number verification steps:
- Install the new pad with the number down.
- Remove the adjusting tool.
- Recheck the valve clearance.
- If the clearance is incorrect, repeat all of the clearance adjustment steps until the proper clearance is obtained.

3. Assembly
   Reverse removal steps.

Note the Following Assembly Step:
- Install head cover

Head Cover Bolt:
10 Nm (1.0 m•kg, 7.2 ft•lb)

INTAKE

B MEASURED CLEARANCE	A INSTALLED PAD NUMBER																								
	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320
0.00 ~ 0.02			200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310
0.03 ~ 0.07		200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315
0.08 ~ 0.12																									
0.13 ~ 0.17	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	
0.18 ~ 0.22	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320		
0.23 ~ 0.27	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320			
0.28 ~ 0.32	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320				
0.33 ~ 0.37	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320					
0.38 ~ 0.42	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320						
0.43 ~ 0.47	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320							
0.48 ~ 0.52	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320								
0.53 ~ 0.57	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320									
0.58 ~ 0.62	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320										
0.63 ~ 0.67	255	260	265	270	275	280	285	290	295	300	305	310	315	320											
0.68 ~ 0.72	260	265	270	275	280	285	290	295	300	305	310	315	320												
0.73 ~ 0.77	265	270	275	280	285	290	295	300	305	310	315	320													
0.78 ~ 0.82	270	275	280	285	290	295	300	305	310	315	320														
0.83 ~ 0.87	275	280	285	290	295	300	305	310	315	320															
0.88 ~ 0.92	280	285	290	295	300	305	310	315	320																
0.93 ~ 0.97	285	290	295	300	305	310	315	320																	
0.98 ~ 1.02	290	295	300	305	310	315	320																		
1.03 ~ 1.07	295	300	305	310	315	320																			
1.08 ~ 1.12	300	305	310	315	320																				
1.13 ~ 1.17	305	310	315	320																					
1.18 ~ 1.22	310	315	320																						
1.23 ~ 1.27	315	320																							
1.28 ~ 1.32	320																								

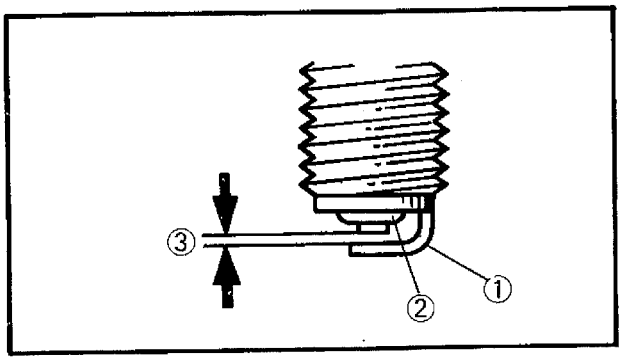
VALVE CLEARANCE (engine cold) 0.08 ~ 0.12 mm (0.031 ~ 0.048 in)
Example Installed is 250
Measured clearance is 0.32 mm (0.013 in)
Replace 250 pad with 270
*Pad number: (example) Pad No. 250 = 2.50 mm (0.098 in)
Pad No. 255 = 2.55 mm (0.100 in)
Always install pad with number down

EXHAUST

B MEASURED CLEARANCE	A INSTALLED PAD NUMBER																								
	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320
0.00 ~ 0.02				200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305
0.03 ~ 0.07			200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310
0.08 ~ 0.12		200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315
0.13 ~ 0.17																									
0.18 ~ 0.22	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	
0.23 ~ 0.27	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320		
0.28 ~ 0.32	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320			
0.33 ~ 0.37	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320				
0.38 ~ 0.42	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320					
0.43 ~ 0.47	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320						
0.48 ~ 0.52	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320							
0.53 ~ 0.57	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320								
0.58 ~ 0.62	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320									
0.63 ~ 0.67	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320										
0.68 ~ 0.72	255	260	265	270	275	280	285	290	295	300	305	310	315	320											
0.73 ~ 0.77	260	265	270	275	280	285	290	295	300	305	310	315	320												
0.78 ~ 0.82	265	270	275	280	285	290	295	300	305	310	315	320													
0.83 ~ 0.87	270	275	280	285	290	295	300	305	310	315	320														
0.88 ~ 0.92	275	280	285	290	295	300	305	310	315	320															
0.93 ~ 0.97	280	285	290	295	300	305	310	315	320																
0.98 ~ 1.02	285	290	295	300	305	310	315	320																	
1.03 ~ 1.07	290	295	300	305	310	315	320																		
1.08 ~ 1.12	295	300	305	310	315	320																			
1.13 ~ 1.17	300	305	310	315	320																				
1.18 ~ 1.22	305	310	315	320																					
1.23 ~ 1.27	310	315	320																						
1.28 ~ 1.32	315	320																							
1.33 ~ 1.37	320																								

VALVE CLEARANCE (engine cold) 0.13 ~ 0.17 mm (0.052 ~ 0.068 in)
Example Installed is 250
Measured clearance is 0.32 mm (0.013 in)
Replace 250 pad with 265
*Pad number: (example) Pad No. 250 = 2.50 mm (0.098 in)
Pad No. 255 = 2.55 mm (0.100 in)
Always install pad with number down

SPARK PLUG/CRANKCASE VENTILATION SYSTEM



SPARK PLUG

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

Spark Plug Gap:
0.6~0.7 mm (0.0236~0.0276 in)

Clean the plug with a spark plug cleaner if necssary.

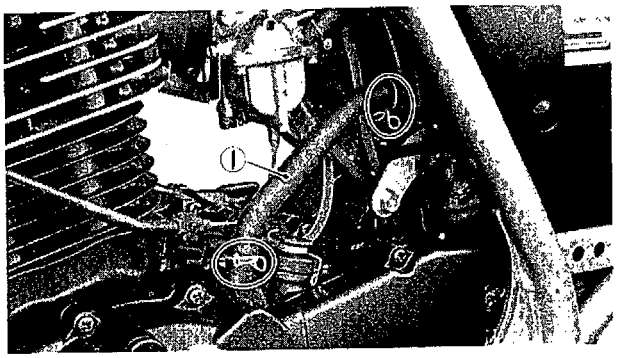
Standard Spark Plug:
D8EA (NGK)
X24ES-U (NIPPONDENSO)

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

4. Tighten:
   - Spark plug(s)

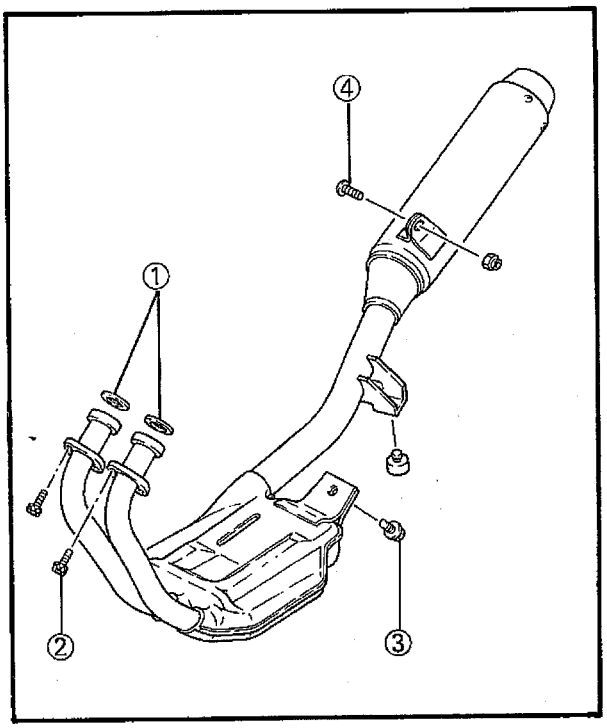
Spark Plug
17.5 Nm (1.75 m•kg, 12.5 ft•lb)

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



CRANKCASE VENTILATION SYSTEM

1. Inspect:
   - Crankcase ventilation hose ①
     Cracks/Damage→Replace.



FUEL LINE

1. Inspect:
   - Fuel hoses
   - Vacuum lines

   Cracks/Damage→Replace.

INTAKE MANIFOLD

1. Tighten:
   - Carburetor clamps
   - Carburetor joint bolts
2. Inspect:
   - Carburetor joint
   - Gaskets

   Cracks/Damage→Replace.

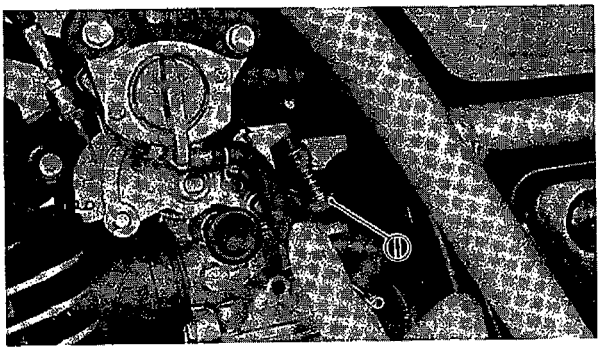
EXHAUST SYSTEM

1. Inspect:
   - Exhaust pipe gasket(s) ①

   Damage→Replace.

   Exhaust gas leakage → Repair.
2. Tighten:
   - Exhaust pipe bolts
   - Muffler bolts

Exhaust Pipe Flange Bolts ②:
12 Nm (1.2 m•kg, 8.7 ft•lb)
Muffler Chamber Bolt ③:
15 Nm (1.5 m•kg, 11 ft•lb)
Muffler Bracket Bolt ④:
30 Nm (3.0 m•kg, 22 ft•lb)



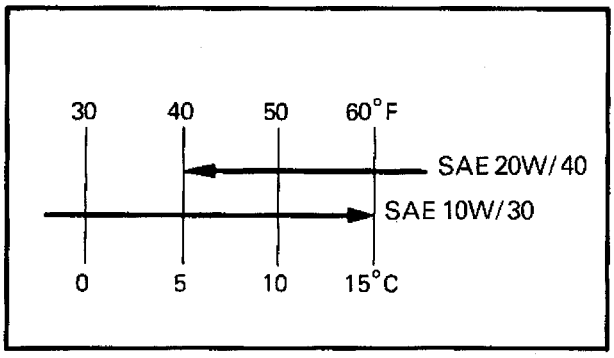
IDLE SPEED

1. Warm up engine for a few minutes.
2. Adjust:
   - Idle speed

   Turn the throttle stop screw ① clockwise to increase engine speed and counterclockwise to decrease engine speed.

1,300 ~ 1,400 r/min

ENGINE OIL



ENGINE OIL

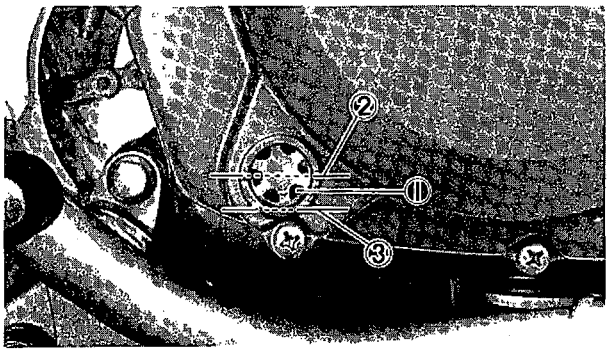
At 5°C (40°F) or Higher:
SAE 20W40 Type SE Motor Oil
At 15°C (60°F) or Lower:
SAE 10W30 Type SE Motor Oil

Oil Level Measurement

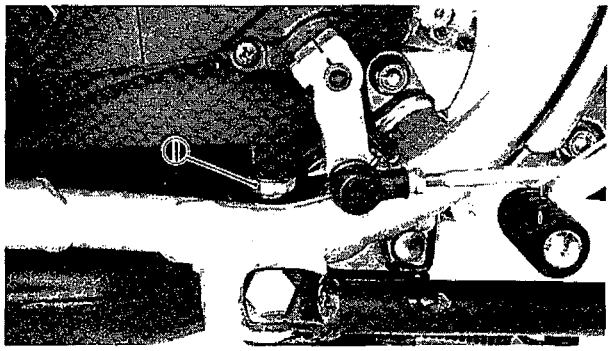
1. Check
   - Oil level

Oil level measurement steps:
- Place the motorcycle on its centerstand.
- Warm up the engine for a few minutes.
- Stop the engine.
- Observe the oil level through the level window located at the lower part of left side crankcase cover.
  Oil level low→Add oil to proper level.

NOTE:
- Position motorcycle straight up when checking oil level; a slight tilt to the side can produce false readings.
- Wait a few minutes until level settles before checking.
- Oil level should be between maximum and minimum marks.



① Level window
② Maximum
③ Minimum



Oil Change (Without filter change)

1. Warm up engine for several minutes.
2. Place a receptacle under the engine.
3. Remove:
   - Oil filler cap
4. Remove:
   - Drain plug ①
   Drain the engine oil

5. Tighten:
   •Drain plug

	43 Nm (4.3 m•kg, 31 ft•lb)

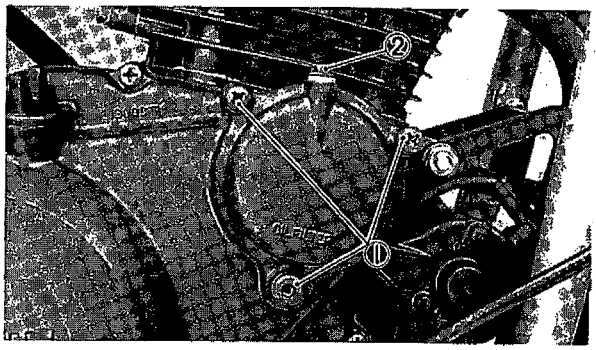
6. Fill:
   •Crankcase

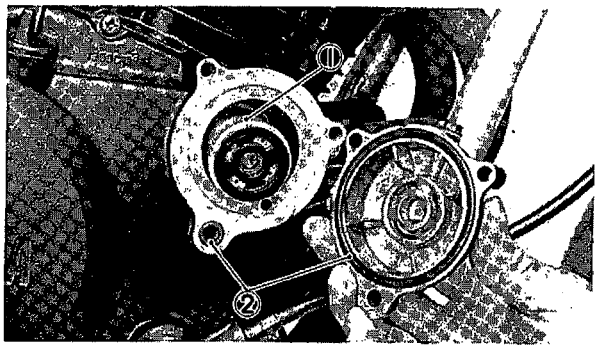
	1.5 L (1.32 Imp qt, 1.6 US qt) **Recommended Engine Oil**

CAUTION:

Do not allow foreign material to enter the crankcase.

7. Install:
   •Filler cap



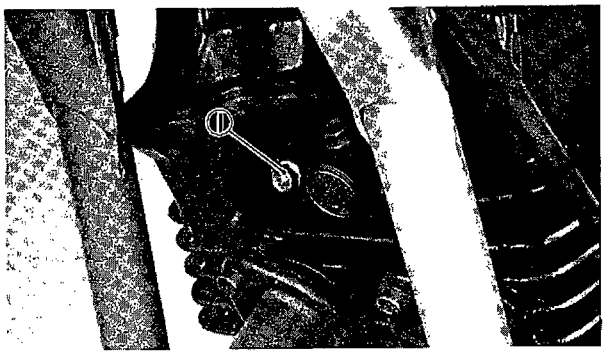


Oil Change (With filter change)

Follow the "Oil Change (without filter change)" steps 1~4. Then proceed as follows:

1. Remove:
   •Screws ①
   •Bolt
   •Air bleed screw ②
   •Oil filter cover
   •Oil filter
2. Install:
   •Oil filter (New) ①
   Replace periodically as indicated.
3. Inspect:
   •O-rings ②
   Cracks/Damage→Replace
4. Install:
   •Drain plug
   •Oil filter cover
   •Screw
   •Bolt
   •Air bleed screw

	Drain Plug: **43 Nm (4.3 m•kg, 31 ft•lb)** **Oil Filter Bolt:** **10 Nm (1.0 m•kg, 7.2 ft•lb)** **Oil Filter screw** **7 Nm (0.7 m•kg, 5.1 ft•lb)** **Air bleed screw** **5 Nm (0.5 m•kg, 3.6 ft•lb)**



5. Fill:
   - Crankcase

	1.5 L (1.32 Imp qt, 1.6 US qt) **Recommended Engine Oil**

6. Warm up engine for a few minutes, then stop engine.
7. Observe:
   - Oil level

CAUTION:

Check oil pressure after replacing engine oil as follows:

- **Slightly loosen an oil line check bolt ① in the cylinder head.**
- **Start the engine. Keep it idling until oil begins to seep from the loosened oil line check bolt.**
- **Turn the engine off, and tighten the oil line check bolt to specification.**

	Oil Line Check Bolt: **10 Nm (1.0 m•kg, 7.2 ft•lb)**

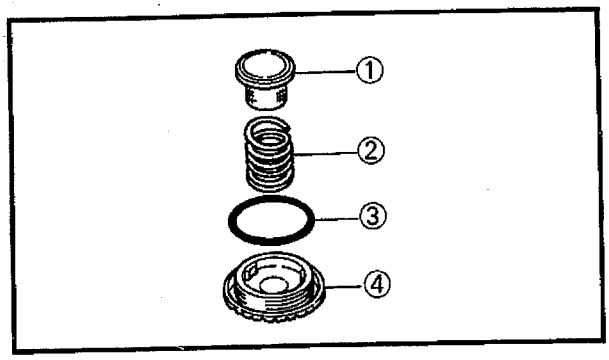
- **Turn off engine immediately if no oil seeps from oil line check bolt after one minute to prevent engine seizure.**
- **Locate and resolve problem, then recheck oil pressure.**

Oil Strainer Cleaning

Follow the "Oil Change (without filter change)" Steps 1~4. Then proceed as follows:

1. Remove:
   - Oil strainer plug
   - O-ring
   - Compression spring
   - Oil strainer

2. Inspect:
   - Oil strainer
     Contamination→Clean or replace
   - O-ring
     Cracks/Damage→Replace



3. Install:
   - Oil strainer ①
   - Compression spring ②
   - O-ring ③
   - Oil strainer plug ④

Oil strainer plug:
32 Nm (3.2 m•kg, 23 ft•lb)

4. Tighten:
   - Drain plug

43 Nm (4.3 m•kg 31 ft•lb)

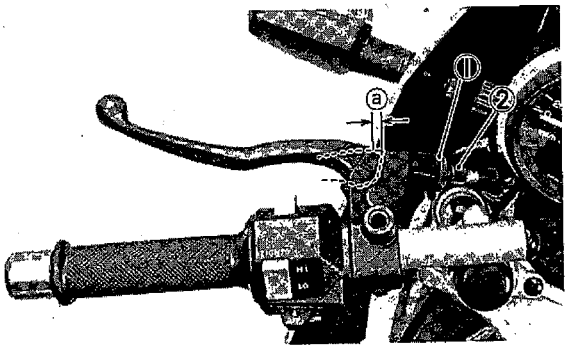
5. Fill:
   - Crankcase

1.5 L (1.32 Imp qt, 1.6 US qt)
Recommended Engine Oil

CAUTION:

Do not allow foreign material to enter the crankcase.

6. Install:
   - Filler cap



CLUTCH ADJUSTMENT

Clutch Lever Free Play Adjustment

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

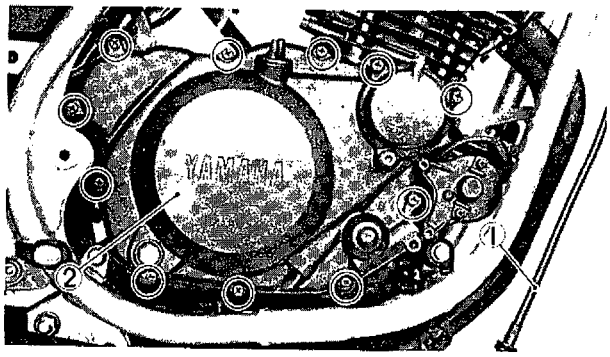
   Turn the adjuster ② clockwise or counterclockwise until proper lever free play is attained.

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

3. Tighten the locknut.

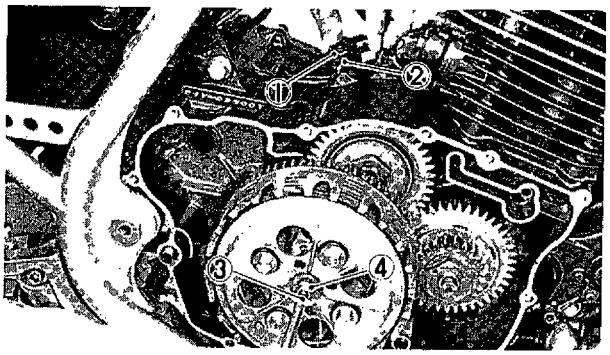
INSP ADJ

CLUTCH ADJUSTMENT



Mechanism Adjustment

1. Drain:
   - Crankcase
2. Disconnect:
   - Speedometer cable ①
3. Remove:
   - Right crankcase cover ②
4. Disconnect:
   - Clutch cable
     (at push lever end)
5. Loosen:
   - Short push rod locknut

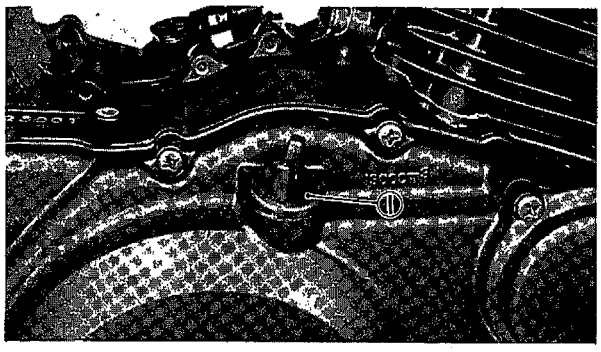


6. Turn:
   - Push lever
     (to align the pointer ① of the push lever wiht the crankcase embossed mark ②)

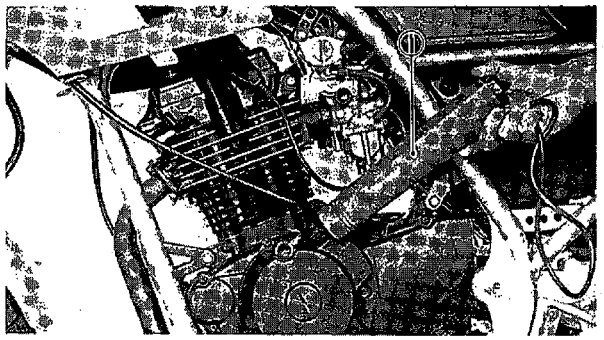
③ Short push rod
④ Locknut

7. Turn:
   - Short push rod
     (in or out until it lightly seats against a push rod ball.)
8. Tighten:
   - Locknut
9. Connect:
   - Clutch Cable
10. Install:
    - Right crankcase cover
11. Connect:
    - Clutch cable
12. Fill
    - Crankcase

	1.5 L (1.32 Imp qt, 1.6 US qt) **Recommended Engine Oil**



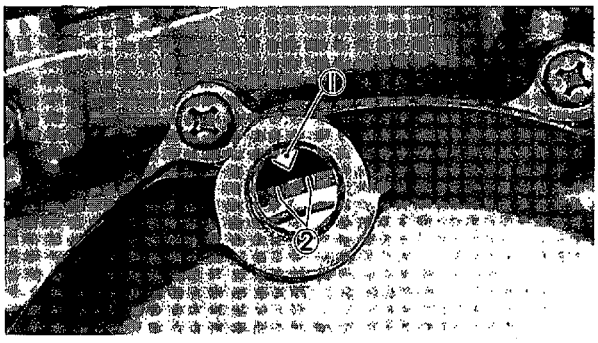
13. Install:
    - Filler cap ①
14. Adjust:
    - Clutch lever free play



IGNITION TIMING CHECK

1. Remove:
    - Plug screw
      (on the left crankcase cover)
2. Connect:
    - Timing Light (90890-03109) ①
      (to the spark plug wire)
3. Warm up the engine and allow it to idle at the specified speed. Use the tachometer.

	Engine Speed : 1200 r/min



4. Observe:
    - Stationary pointer ①
      The pointer should be within the "T" ② mark on the flywheel.
      Out of range/Unsteady → Check flywheel and pick up assembly for tightness and/or damage.
5. Install:
    - Plug screw

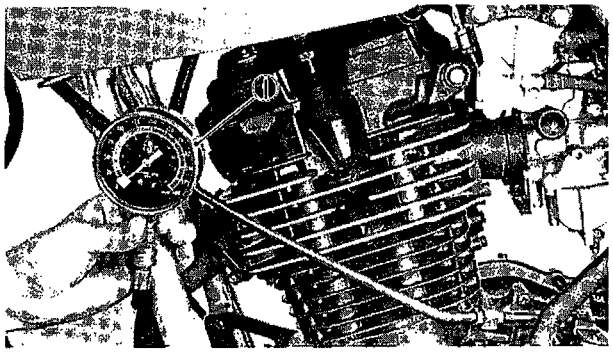
COMPRESSION PRESSURE MEASUREMENT

Insufficient compression pressure will result in performance loss and may indicate leaking valves or worn or damaged piston rings.

1. Measure:
    - Valve clearance
2. Warm up engine for several minutes, then stop the engine.

INSP ADJ

COMPRESSION PRESSURE MEASUREMENT



3. Remove:
   - Spark plugs
4. Connect:
   - Compression Gauge (90890-03081) ①
5. Measure:
   - Compression

NOTE:

Turn over engine with electric starte (be sure battery is fully charge) with choke and throttle valve wide-open until the pressure indicated on gauge can rise no further. Compression should be within the specified levels.

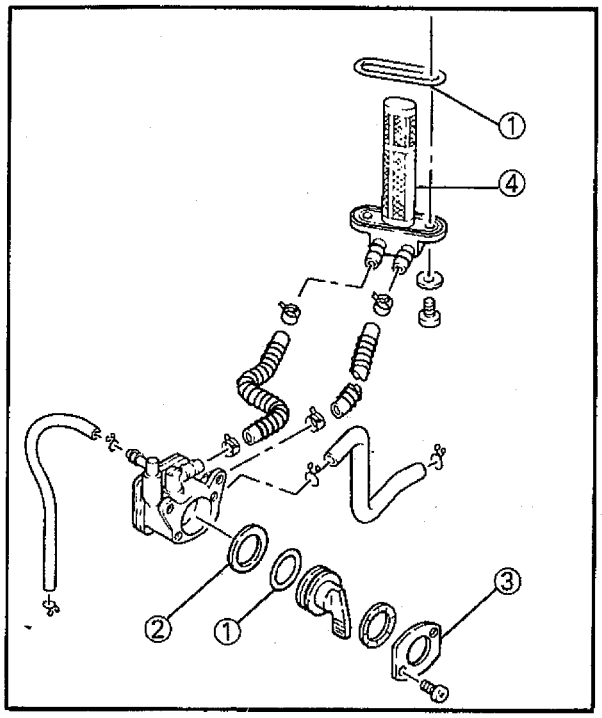
Compression Pressure (at sea level):
Standard . . . 1,079 kPa (11 kg/cm^2, 156 psi)
Minimum . . 883 kPa (9 kg/cm^2, 128 psi)
Maximum . . 1,177 kPa (12 kg/cm^2, 171 psi)

WARNING:

When cranking engine, ground spark plug wires to prevent sparking.

Compression test steps (below minimum levels):
- Squirt a few drops of oil into cylinder.
- Measure compression again.
- A higher reading than before (without oil) may indicate worn or damaged piston.
- If pressure is same after measuring with oil, one or both rings, valves, cylinder head gasket, or piston may be defective.

Compression test steps (above maximum levels):
- Check cylinder head, valve surfaces, or piston crown for carbon deposits.



CHASSIS

FUEL COCK AND FILTER

① O-ring
② Valve
③ Cock plate
④ Filter screen

Removal and Inspection

1. Inspect:
   - Fuel cock operation
     Leakage/Contamination → Disassemble
2. Remove:
   - Seat
   - Fuel tank
     Position tank so that fuel will not spill when filter is removed.
   - Fuel filter
3. Inspect:
   - Filter screen
     Contamination → Replace screen.
4. Remove:
   - Screws
   - Cock plate
   - O-ring
   - Valve
5. Inspect:
   - Fuel cock components (all)
     Damage → Replace.
   - Diaphragm
     Damage → Replace cock assembly.
6. Inspect:
   - Gasket surfaces
     Scratches/Corrosion → Replace cock assembly.

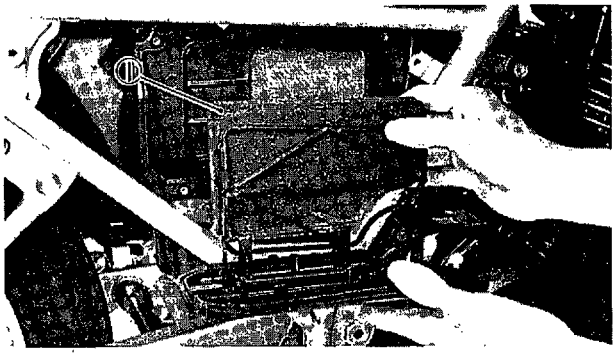
NOTE:

Drain and flush fuel tank if abrasive damage to any components is evident.

7. Assemble:
   - Fuel cock
8. Install:
   - Fuel cock
   - Filter
     (On to fuel tank)

INSP ADJ

AIR FILTER/FRONT AND REAR BRAKE



AIR FILTER

1. Remove:
   - Right side cover
   - Air filter case cover
   - Air filter guide
   - Air filter element ①

CAUTION:

The engine should never be run without the air/filter element installed; excessive piston and/or cylinder wear may result.

2. Inspect:
   - Element
     Contamination→Clean element with solvent

NOTE:

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

3. Apply:
   - SAE 10W30 motor oil
     (to the element)

NOTE:

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

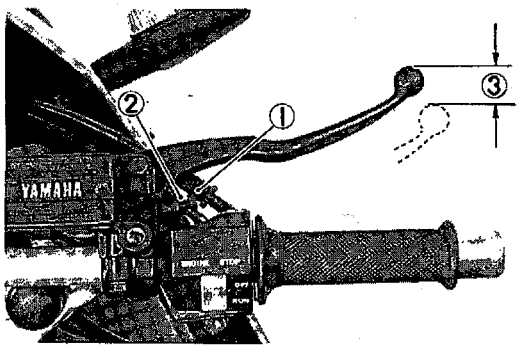
FRONT AND REAR BRAKE

Front Brake Lever Free Play Adjustment

CAUTION:

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

INSP ADJ



1. Loosen:
   - Adjuster locknut
2. Rotate:
   - Adjuster ①

   Turn it clockwise or counterclockwise until proper lever end free play ③ is attained.

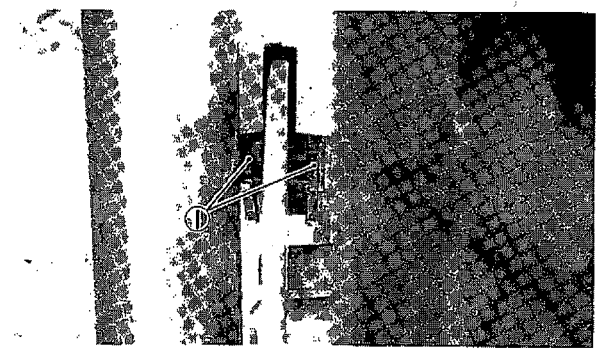
Front Brake Lever Free Play:
5~8 mm (0.2~0.3 in)

3. Tighten:
   - Locknut ②

Front Brake Pad

1. Activate brake lever
2. Inspect:
   - Wear indicator ①

   Disc plate contact (almost)→Replace both pads.

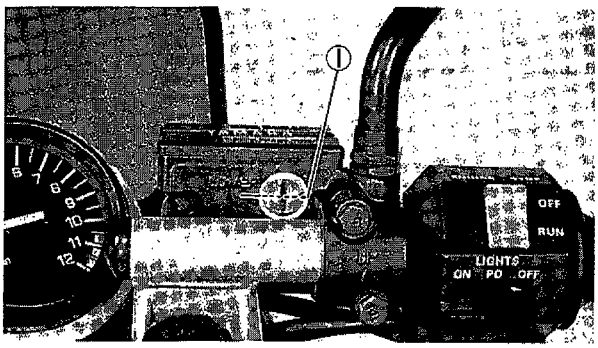


Front Brake Pad Wear Limit:
0.5 mm (0.0197 in)

Brake Fluid

1. Observe:
   - Brake fluid level

   Fluid at lower level→Replenish.



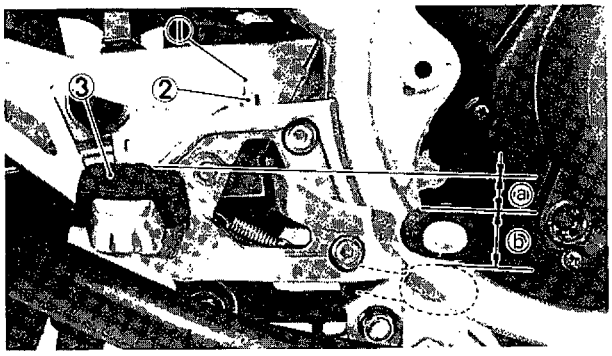
① Lower level

Brake Fluid: DOT #3

WARNING:

- **Use only designated qualty brake fluid to avoid poor brake performance.**
- **Refill with same type and brand of brake fluid; mixing fluids could result in poor brake performance.**
- **Be sure that water or other contaminants do not enter master cylinder when refilling.**
- **Clean up spilled fluid immediately to avoid erosion of painted surfaces or plastic parts.**

FRONT AND REAR BRAKE



Rear Brake Pedal Height Adjustment

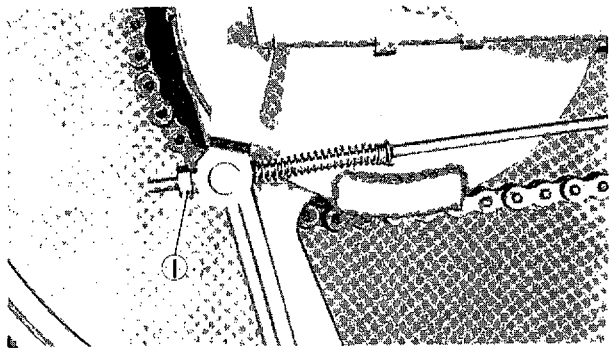
1. Loosen:
   - Locknut ②
2. Rotate:
   - Adjuster ①

   Turn it clockwise or counterclockwise until proper brake pedal height ⓐ is attained.

Brake Pedal Height ⓐ :
30 mm (1.2 in)

③ Footrest
ⓑ Free play

3. Tighten:
   - Locknut



Rear Brake Pedal Free Play Adjustment

WARNING:

Adjust pedal height, then adjust brake pedal free play.

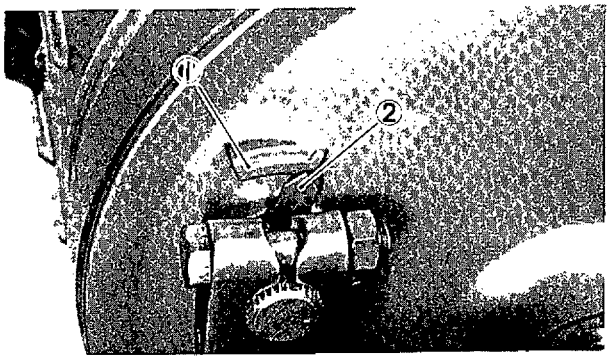
1. Rotate:
   - Adjuster nut ①

   Turn it clockwise or counterclockwise until proper brake pedal free play is attained.

Brake Pedal Free Play:
20 ~ 30 mm (0.8 ~ 1.2 in)

WARNING:

Check to verify correct brake light operation after adjustment.

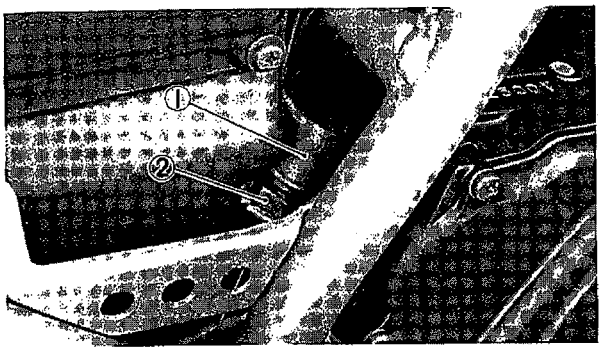


Rear Brake Shoe

1. Depress brake pedal
2. Inspect:
   - Wear indicator ②

   Indicator at wear limit line → Replace brake shoes.

① Wear limit line



Rear Brake Light Switch Adjustment

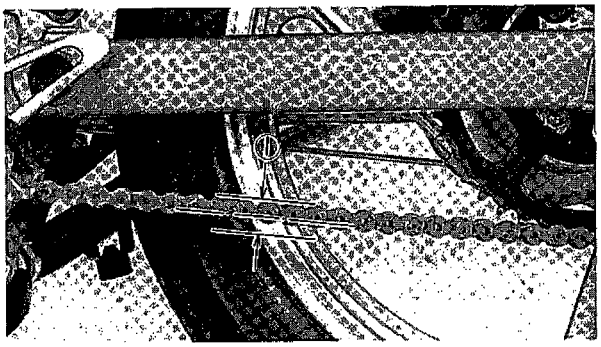
1. Remove:
   - Right side cover
2. Hold the switch body ① with your hand so it does not rotate and turn the adjusting nut ②

DRIVE CHAIN

Drive Chain Slack Check

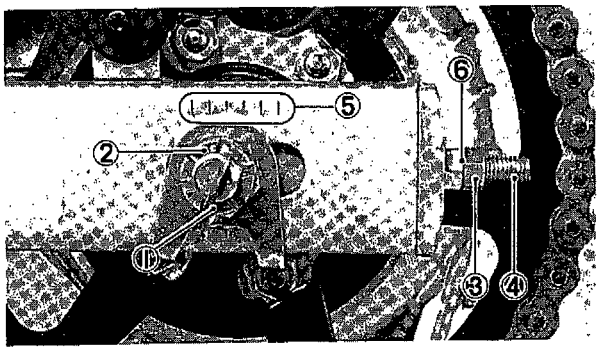
NOTE:

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



1. Lift the rear wheel by applying centerstand.
2. Measure:
   - Chain deflection ①
     (at the position shown in the photograph.)
     Out of specification→Adjust chain

Chain Deflection:
15 ~ 20 mm (0.6 ~ 0.8 in)



Drive Chain Slack Adjustment

1. Remove:
   - Cotter pin ①
2. Loosen:
   - Axle nut ②
   - Chain puller locknut
   - Rear brake adjuster

④ Chain puller
⑤ Mark for alignment
⑥ Adjuster

3. Adjust:
   - Chain slack
     (by turning adjuster clockwise or counterclockwise)

Adjusting bolt	Chain slack
Turn clockwise	Tighten
Turn counterclockwise	Loosen

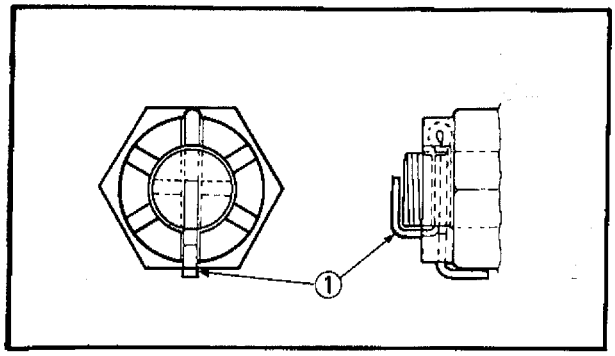
- Brake pedal free play

DRIVE CHAIN

NOTE:

There are marks on each side of rear arm and on each chain puller; use them to check for proper alignment.

4. Tighten:
   - Locknut
   - Axle nut

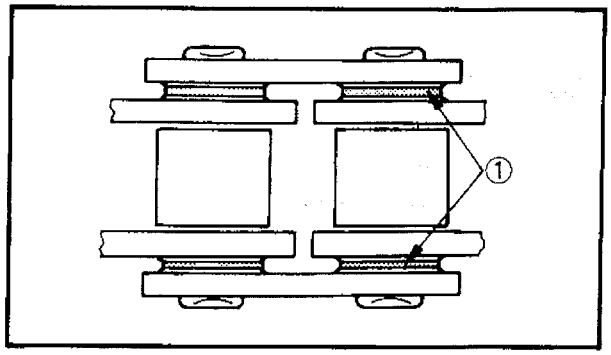


Axle Nut:
107 Nm (10.7 m•kg, 77 ft•lb)

5. Install:
   - Cotter pin ① (new)

NOTE:

Do not loosen the axle nut after torque tightening. If the axle nut groove is not aligned with the wheel shaft cotter pin hole, align groove to hole by tightening up on the axle nut.



Drive Chain Cleaning and Lubrication

1. Drive chain cleaner

Drive Chain Cleaner
Kerosene

CAUTION:

• Do not use steam cleaning, high-pressure washes, and certain solvent or O-ring ① damage may occur.

2. Drive chain lubricant

Drive Chain Lubricant
SAE 30~50 Motor oil or chain lubricants for "O-ring" chains

CAUTION:

• Do not use any other lubricants or O-rings damage may occur.

INSP ADJ

CABLE INSPECTION AND LUBRICATION

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



SAE 10W30 Motor Oil

BRAKE AND CHANGE PEDALS/ BRAKE AND CLUTCH LEVERS

Lubricate pivoting parts of each lever and pedal.



SAE 10W30 Motor Oil

CENTERSTAND AND SIDESTAND

Lubraicate centerstand and sidestand at their pivot points.

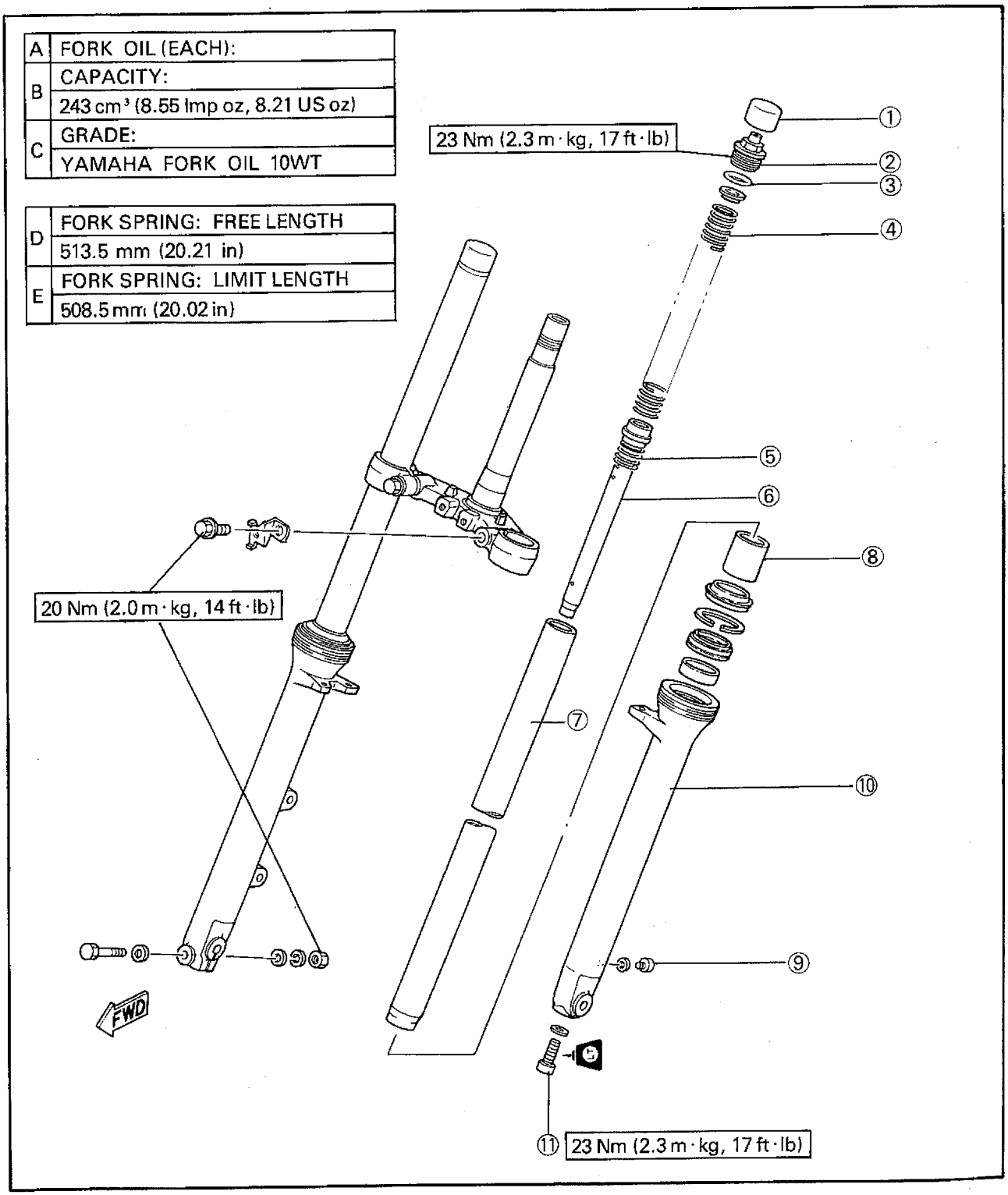


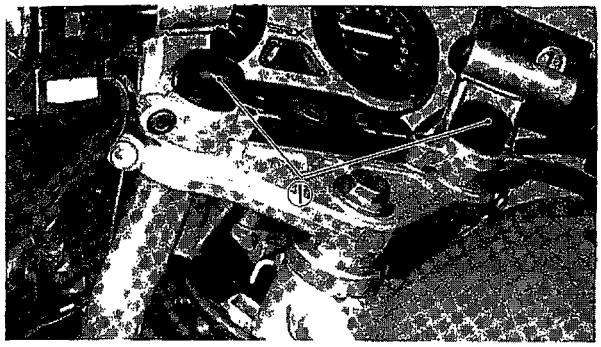
SAE 10W30 Motor Oil

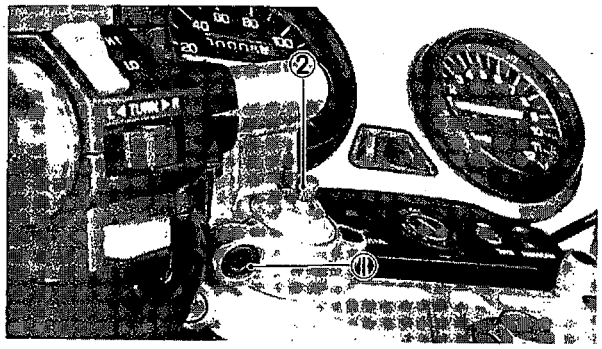
FRONT FORK OIL CHANGE

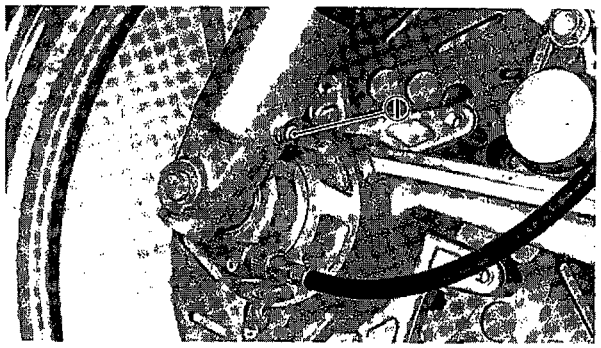
FRONT FORK OIL CHANGE

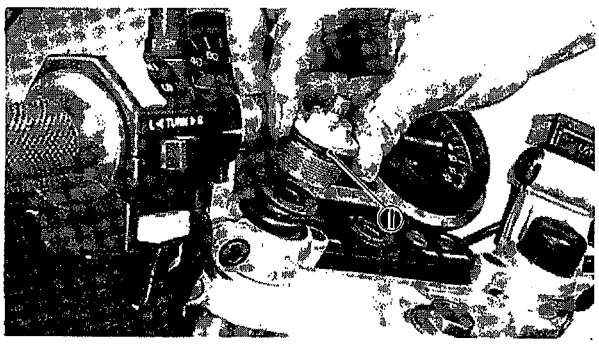
① Rubber cap
② Cap bolt
③ O-ring
④ Fork spring
⑤ Damper rod spring
⑥ Damper rod
⑦ Inner fork tube
⑧ Taper spindle
⑨ Drain bolt
⑩ Outer fork tube
⑪ Damper rod securing bolt











WARNING:

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

1. Remove:
   - Rubber cap ①

2. Loosen:
   - Handlebar pinch bolt ①
3. Remove:
   - Fork cap bolts ②

4. Remove:
   - Drain screws ①

   Drain the fork oil.

WARNING:

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

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

   Wear/Damage→Replace.
6. Install:
   - Drain screws
7. Fill:
   - Front forks

REAR SHOCK ABSORBER ADJUSTMENT

Each Fork:
243 cm³ (8.55 Imp oz, 8.21 Us oz)
Yamaha Fork Oil 10WT

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

8. Tighten:
   - Cap bolts
   - Pinch bolts

Cap Bolt:
23 Nm (2.3 m•kg, 17 ft•lb)
Handlebar pinch bolt
20 Nm (2.0 m•kg, 14 ft•lb)

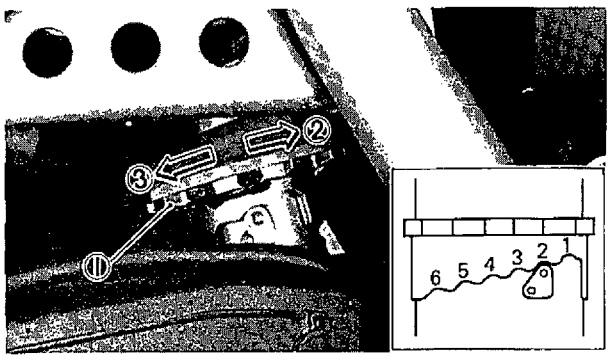
9. Install:
   - Rubber cap

REAR SHOCK ABSORBER ADJUSTMENT

WARNING:

This shock absorber contains hightly pressurized nitrogen gas. Read and understand the following information before handling the shock absrober. 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 absorber to an open flame or other high heat source. This may cause the unit to explode due to excessive gas pressure.**
3. **Do not deform or damage the cylinder in any way. Cylinder damage will result in poor damping performance.**



1. Remove:
   - Left side cover
2. Adjust
   - Shock absorber preload

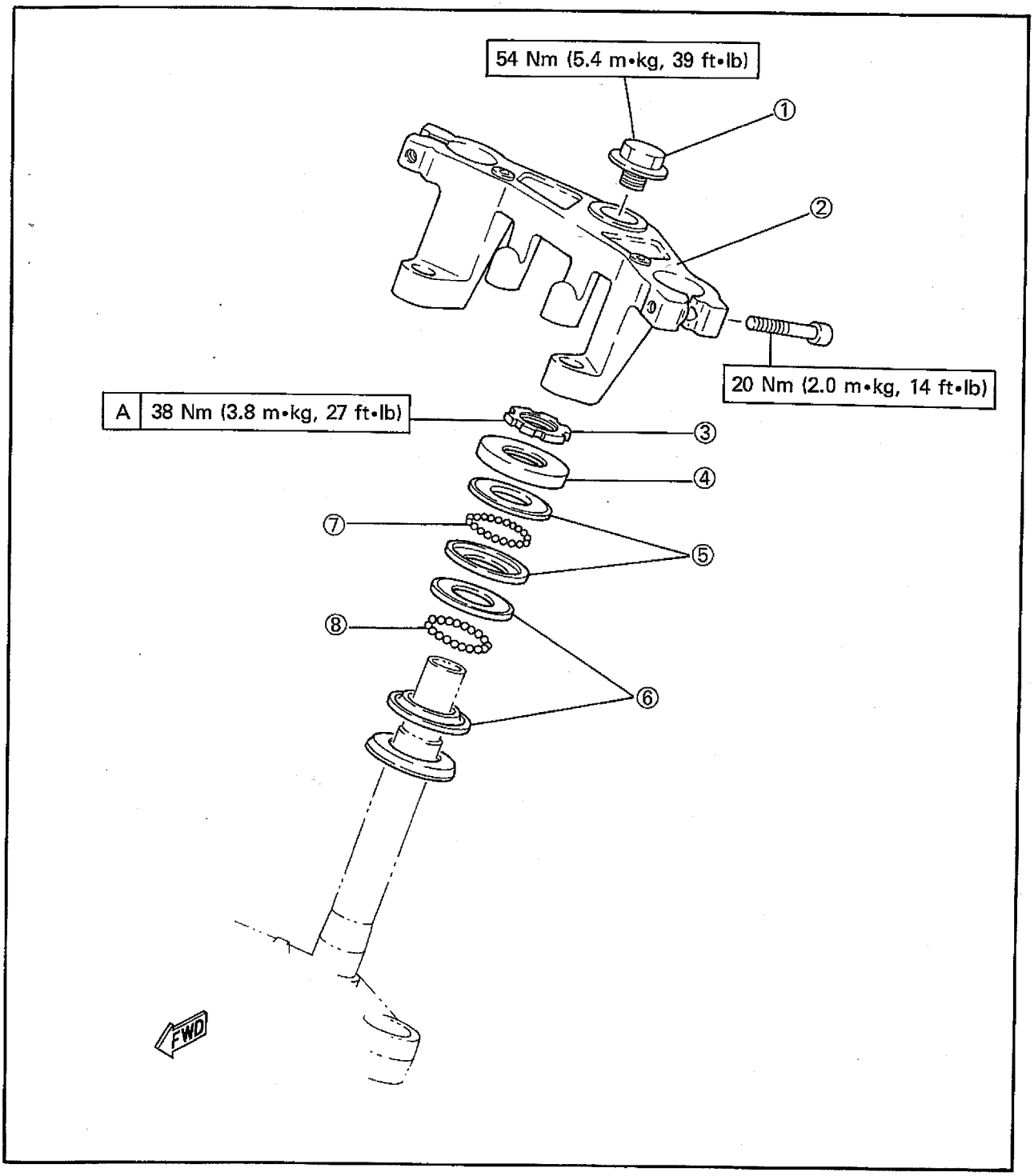
	←Stiffer ②				Std.	Softer ③
Adjusting position	6	5	4	3	2	1

① Adjuster

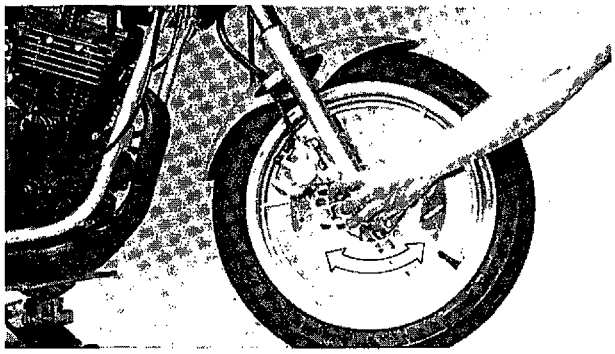
STEERING HEAD

① Steering stem bolt
② Handle crown
③ Ring nut
④ Bearing cover
⑤ Upper bearing races
⑥ Lower bearing races
⑦ Bearing (Upper)
⑧ Bearing (Lower)

A	• TIGHTEN SPECIFIED TORQUE. • IF STEERING IS BINDED LOOSEN THE RING NUT SO THAT THERE IS NO FREE PLAY ON BEARING.

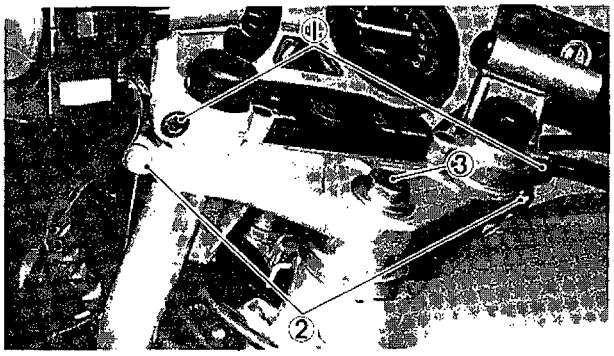


STEERING HEAD



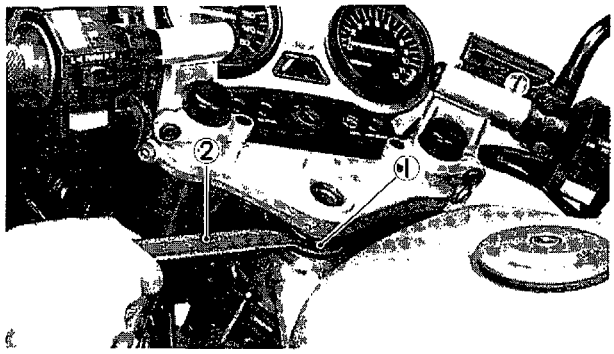
Steering Head Inspection

1. Place the motorcycle on its centerstand, then elevate the front wheel.
2. Check:
   - Steering assembly bearings
     Grasp the bottom of the forks and gently rock the fork assembly back and forth.
     Looseness → Adjust steering head.



Steering Head Adjustment

1. Loosen:
   - Handlebar pinch bolt ①
   - Upper front fork pinch bolt ②
2. Remove:
   - Steering stem bolt ③
3. Lift the handle crown and handlebar assembly.



4. Tighten:
   - Ring nut ①
     Use the Ring Nut Wrench ② (90890-01268)

	Ring Nut **38 Nm (3.8 m•kg, 27 ft•lb)**

NOTE:

If steering is binded, loosen the ring nut so that there is no free play on bearing.

5. Install:
   - Handle crown/Handlebar assembly
   - Steering stem bolt

	Steering Stem Bolt: **54 Nm (5.4 m•kg, 39 ft•lb)**

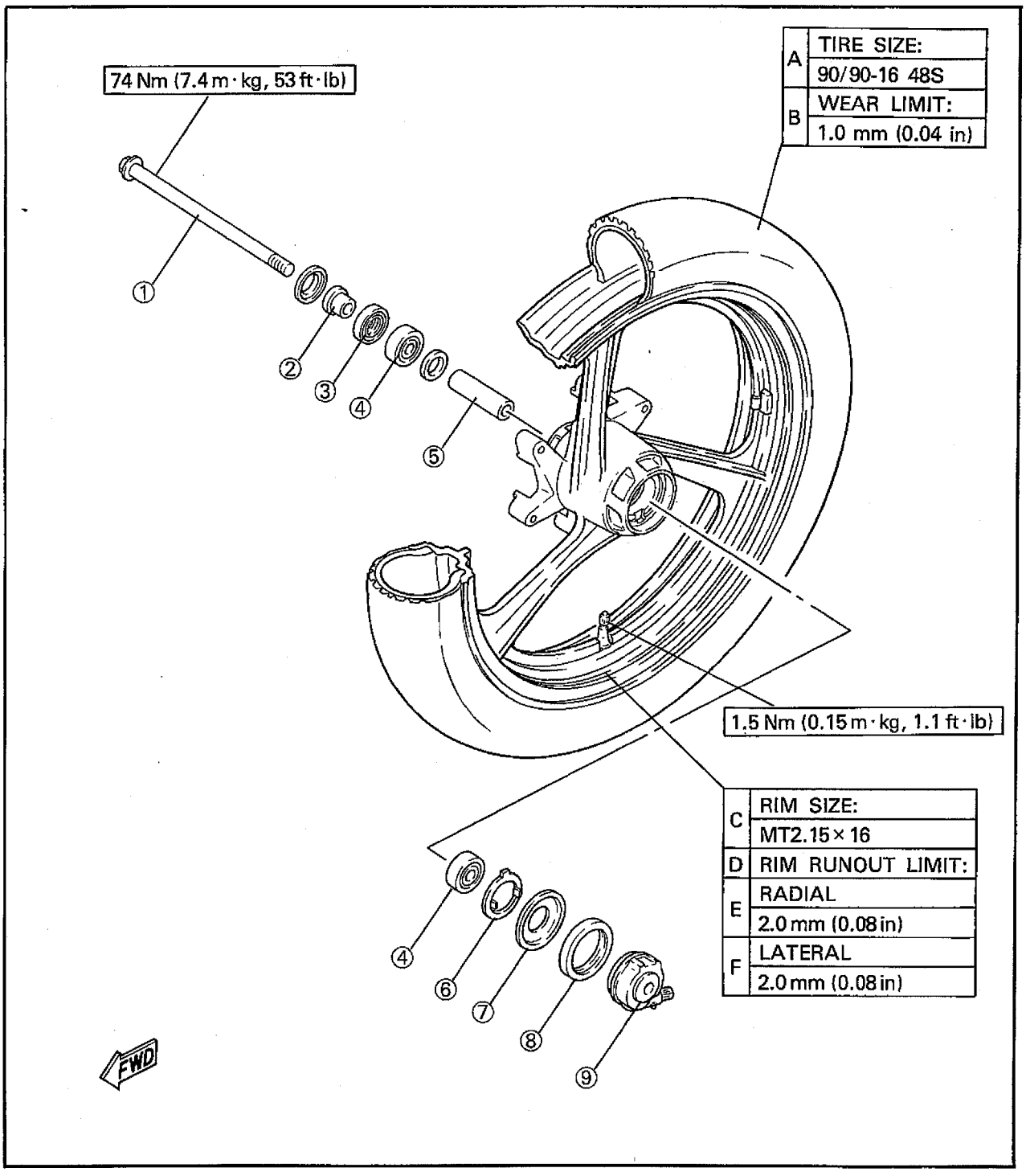
6. Tighten:
   - Upper front fork pinch bolt
   - Handlebar pinch bolt

	Upper front fork pinch bolt: **20 Nm (2.0 m•kg, 14 ft•lb)** **Handlebar pinch bolt** **20 Nm (2.0 m•kg, 14 ft•lb)**

WHEEL BEARINGS

Front Wheel

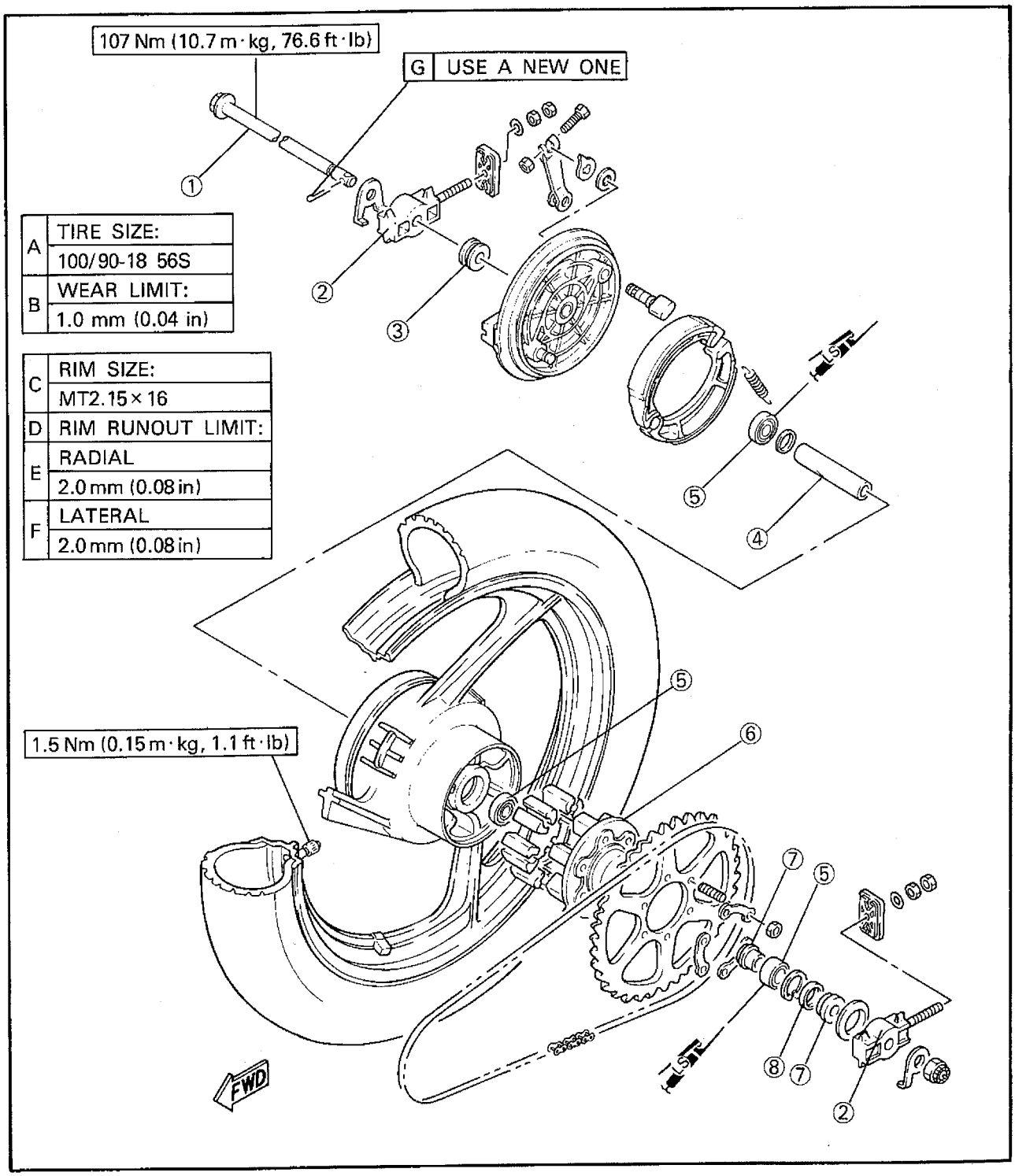
① Front axle
② Collar
③ Oil seal
④ Bearing
⑤ Spacer
⑥ Meter clutch
⑦ Clutch retainer
⑧ Oil seal
⑨ Gear unit assembly

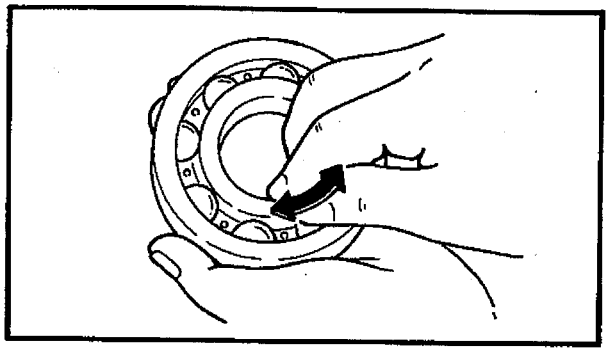


WHEEL BEARINGS

Rear Wheel

① Rear axle
② Chain puller
③ Collar
④ Spacer
⑤ Bearing
⑥ Clutch hub
⑦ Wheel collar
⑧ Oil seal





Front Wheel Bearings

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

Rear Wheel Bearings

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

TUBELESS TIRES AND ALUMINUM WHEELS

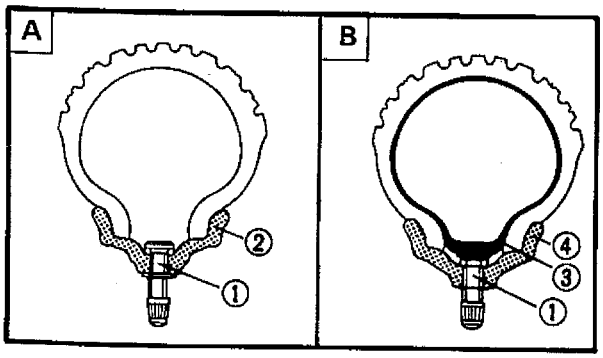
WARNING:

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

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

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

Always perform the following steps to ensure safe operation, maximum tire perfomance, and long sevice.



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

A Tubeless tire
B Tube type tire
① Air valve
② Aluminum wheel (tubeless type)
③ Tube
④ Aluminum wheel (tube type)

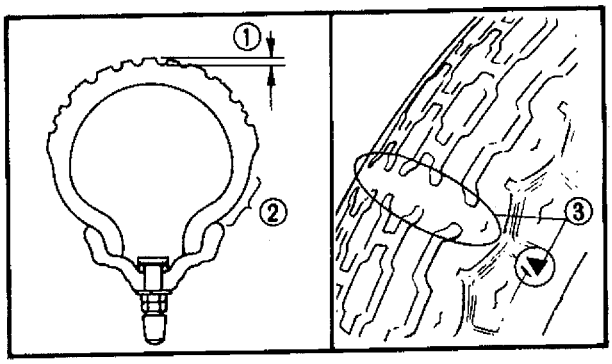
TUBELESS TIRES AND ALUMINUM WHEELS

Basic weight: With oil and full fuel tank	134 kg (295 lb)	
Maximum load*	130 kg (287 lb)	
Cold tire pressure	Front	Rear
Up to 90 kg (198 lb) load*	177 kPa (1.8 kg/cm², 26 psi)	196 kPa (2.0 kg/cm², 28 psi)
90 kg (198 lb) ~ Maximum load*	196 kPa (2.0 kg/cm², 28 psi)	226 kPa (2.3 kg/cm², 32 psi)
High speed rinding	196 kPa (2.0 kg/cm², 28 psi)	226 kPa (2.3 kg/cm², 32 psi)

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

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

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



① Tread depth
② Side wall
③ Wear indicator

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

NOTE:

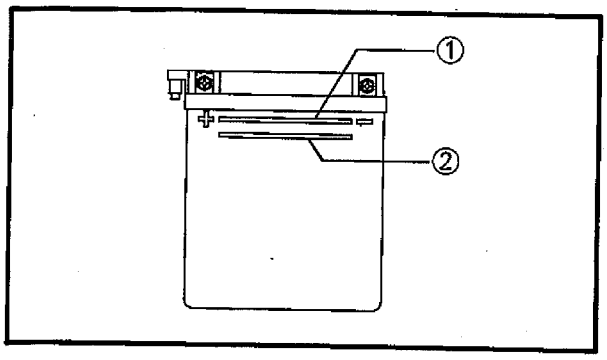
Always balance the wheel when a tire or wheel has been changed or replaced.

4. Tighten:
   - Valve stem locknut

1.5 Nm (0.15 m•kg, 1.1 ft•lb)

WARNING:

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



ELECTRICAL

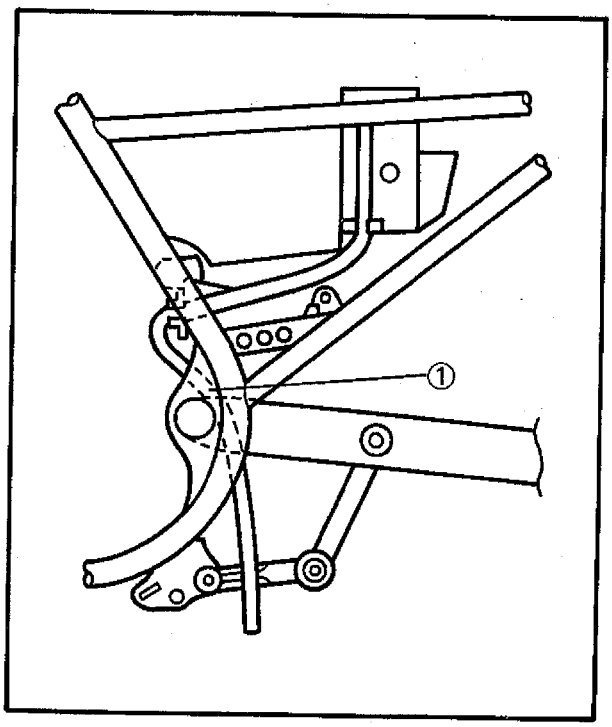
BATTERY

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

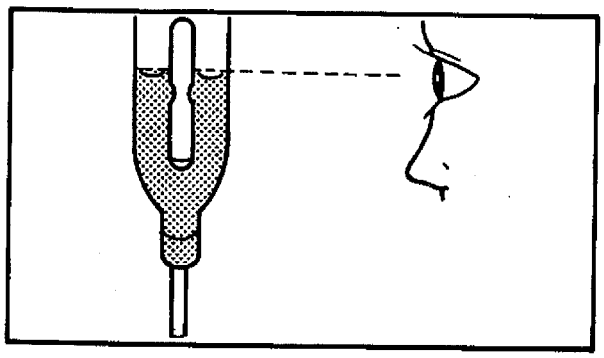
① Upper level
② Lower level

CAUTION:

Refill with distilles water only; tap water contains minerals harmful to a battery.



2. Connect:
   - Breather pipe ①
     Be sure the hose is properly attached and routed.
3. Inspect:
   - Breather pipe
     Obstruction→Remove.
     Damage→Replace.



CAUTION:

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

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

INSP ADJ

HEADLIGHT



WARNING:

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

Always follow these preventive measures:

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

Antidote (EXTERNAL):

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

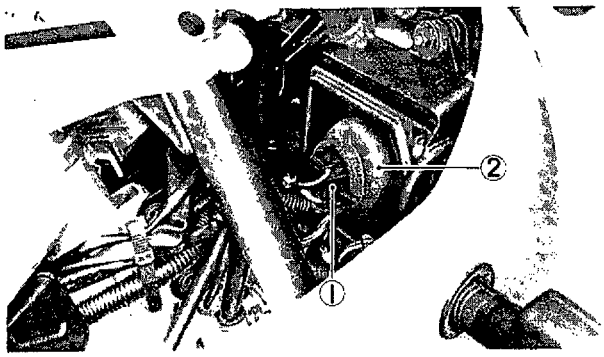
Antidote (INTERNAL):

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

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

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

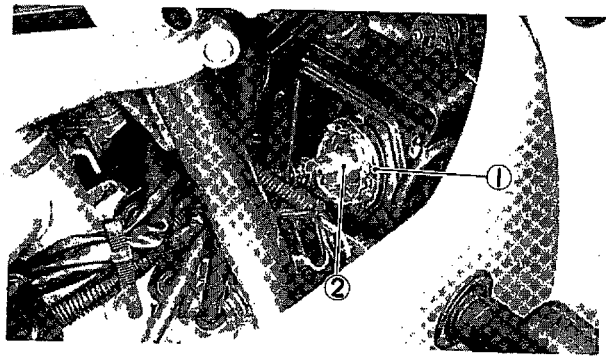
KEEP BATTERIES AND ELECTROLYTE OUT OF REACH OF CHILDREN.



HEADLIGHT

Headlight Bulb Replacement

1. Disconnect:
   - Headlight coupler ①
2. Remove:
   - Cover ②



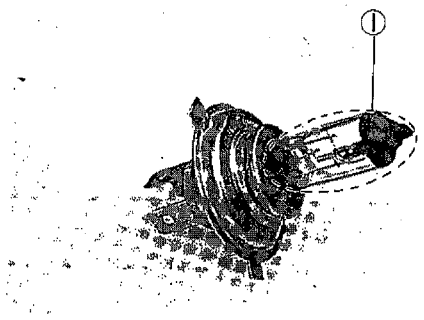
3. Remove:
   - Bulb holder ①
     Turn the bulb holder counterclockwise to release bulb.
   - Headlight bulb ②
4. Install:
   - Bulb (New)

WARNING:

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

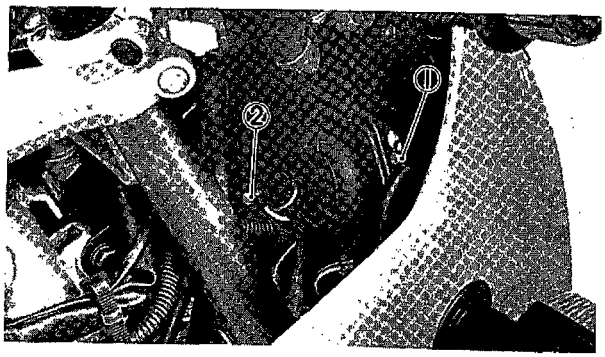
CAUTION:

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



① Don't touch

4. Install:
   - Bulb holder
   - Cover
5. Connect:
   - Headlight coupler



Headlight Adjustment

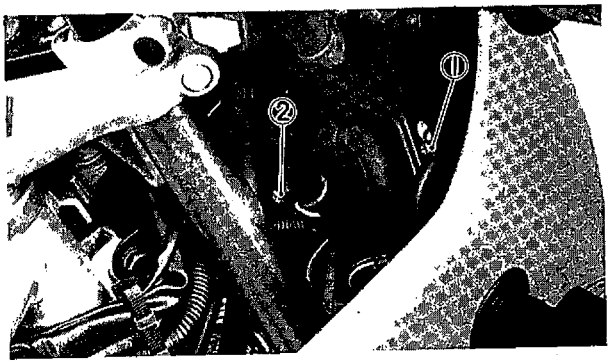
Horizontal adjustment

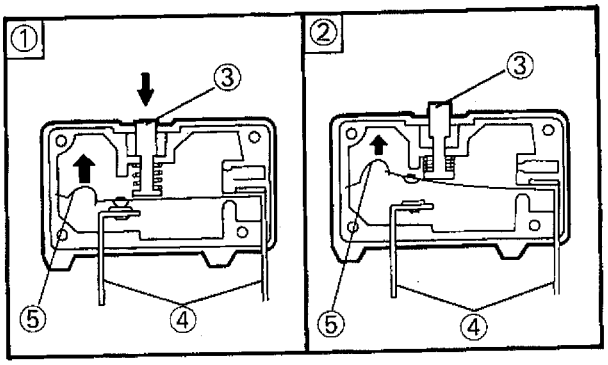
1. Rotate:
   - Horizontal adjusting screw ①

Horizontal adjustment of headlight beam	
Adjusting screw	Beam direction
Turn clockwise	→ Right
Turn counterclockwise	← Left

INSP ADJ

CIRCUIT BREAKER





Vertical adjustment

1. Rotate:
   - Vertical adjusting screw ②

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

CIRCUIT BREAKER

The circuit breaker is located under the seat.

1. Inspect:
   - Circuit breaker
     Defective → Replace.

① Switch "OFF"
② Switch "ON"
③ Breaker knob
④ Terminal
⑤ Spring

NOTE:

Install new circuit breaker of proper amperage.

Description	Amperage	Quantity
Main	20A	1

Switch on procedure steps

CAUTION:

Wait 30 seconds before resetting the circuit breaker.

- **Turn off ignition.**
- **Push in the circuit breaker.**
- **Turn on ignition switches to verify operation of electrical device.**
- **If circuit breaker switches off immediately again, check circuit in question.**

WARNING:

Do not use circuit breaker of higher amperage rating than recommended. Extensive electrical system damage and fire could result from substitution of a circuit breaker of improper amperage.

CHAPTER 3.
ENGINE OVERHAUL

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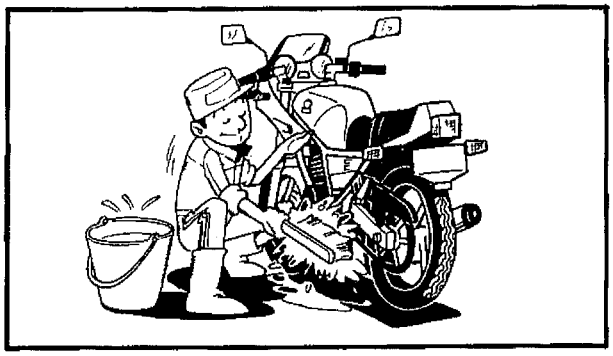
ENGINE OVERHAUL

ENGINE REMOVAL

NOTE:

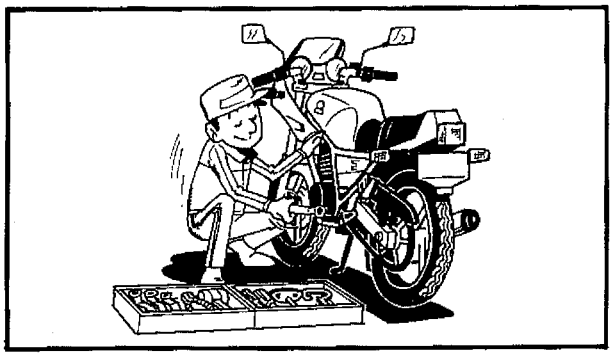
It is not necessary to remove the engine in order to remove the following components:

- Piston
- Clutch
- Carburetor
- AC magneto



PREPARATION FOR REMOVAL

1. Remove all dirt, mud, dust, and foreign material before removal and disassembly.

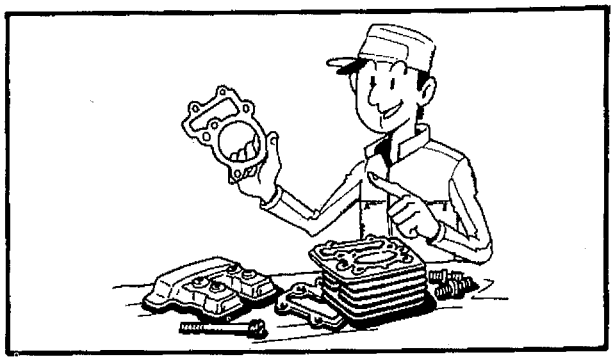


2. Use proper tools and cleaning equipment. Refer to CHAPTER 1, "SPECIAL TOOL."

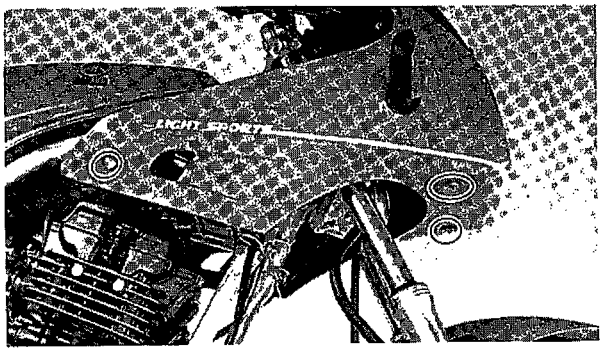


NOTE:

When disassembling the engine, keep mated parts together. This includes gears, cylinders, pistons, and other parts that have been "mated" through normal wear. Mated parts must be reused as an assembly or replaced.

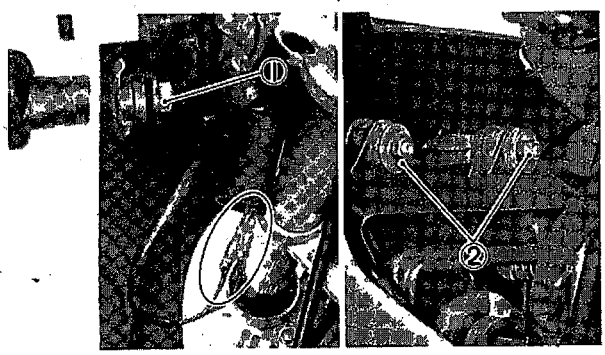


3. During the engine disassembly, clean all parts and place them in trays in the order of disassembly. This will speed up assembly time and help assure that all parts are correctly reinstalled in the engine.
4. Drain engine oil completely.

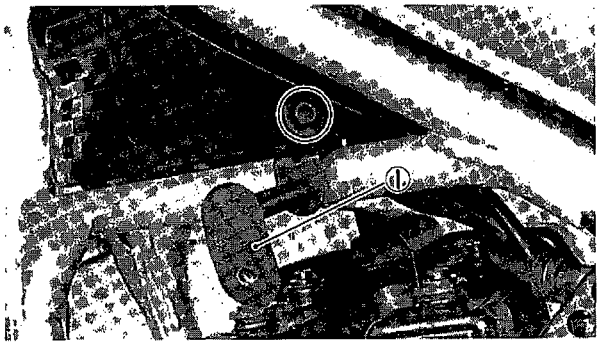


COWLING

1. Remove:
   - Screws



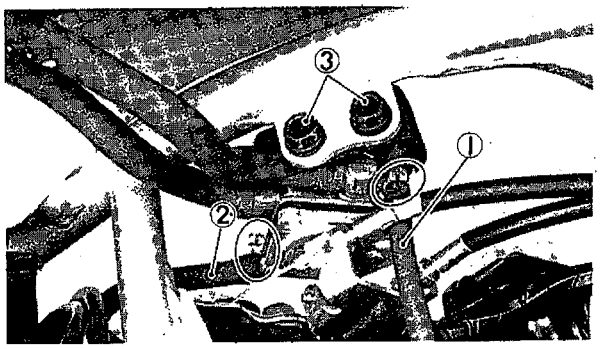
2. Disconnect:
   - Flasher light leads
3. Remove:
   - Nuts ①
   - Flasher light
   - Nuts ②



4. Remove:
   - Bolts
   - Cowling stays ①

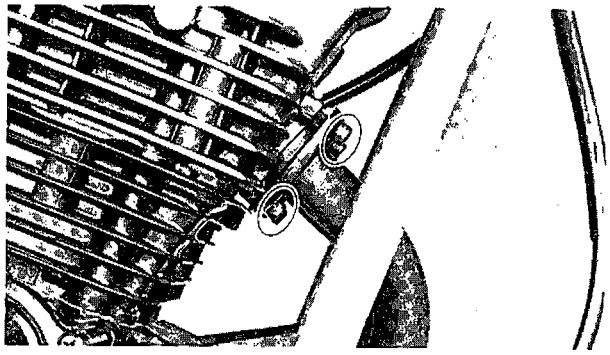
SEAT AND FUEL TANK

1. Turn fuel cock to "ON"
2. Remove:
   - Fuel tank bolt
   - Fuel sender unit lead



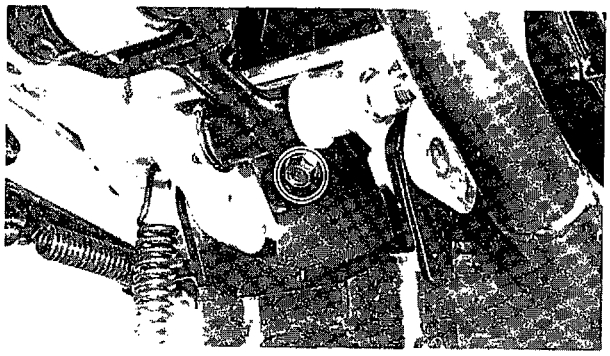
3. Disconnect
   - Fuel cock vacuum hose ①
   - Fuel feed hose ②
4. Remove:
   - Fuel cock securing bolts ③
   - Fuel tank and fuel cock assembly

ENGINE REMOVAL

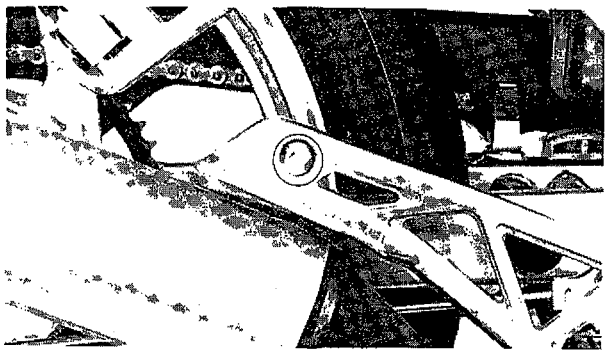


EXHAUST PIPE AND MUFFLER

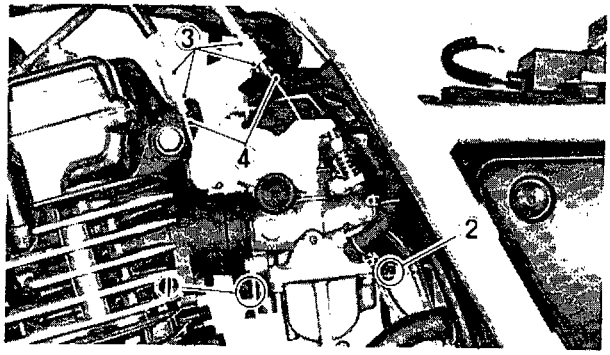
1. Remove
   - Exhaust pipe screws



2. Remove:
   - Middle muffler bolt

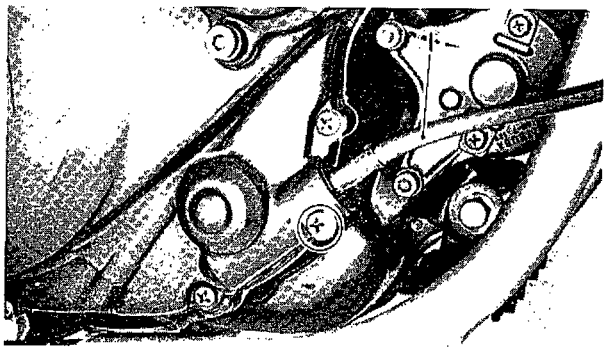


3. Remove:
   - Muffler screws

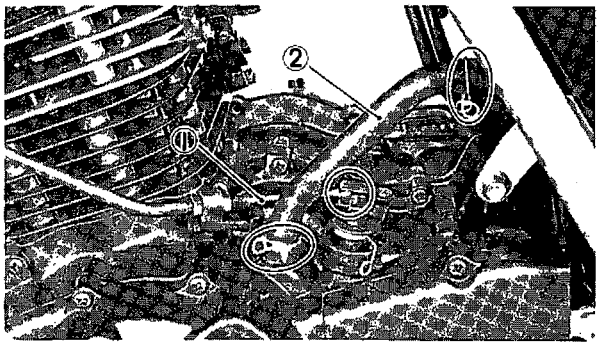


CARBURETOR AND CABLE

1. Loosen:
   - Carburetor joint clamp screw ①
   - Air cleaner joint clamp screw ②
   - Throttle cable lock nut ③
2. Remove:
   - Throttle cable ④
   - Carburetor



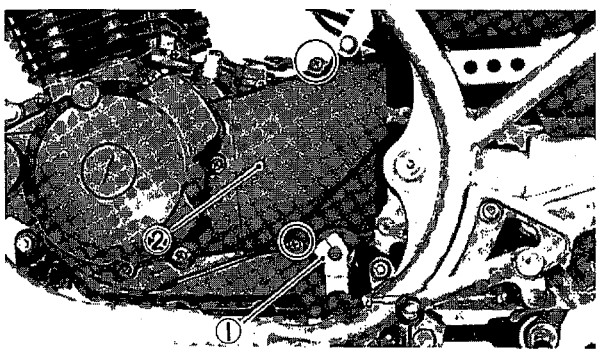
3. Remove:
   - Screw
   - Speedometer cable ①



4. Disconnect:
   - Clutch cable ①

NOTE:
Loosen the clutch lever side adjuster.

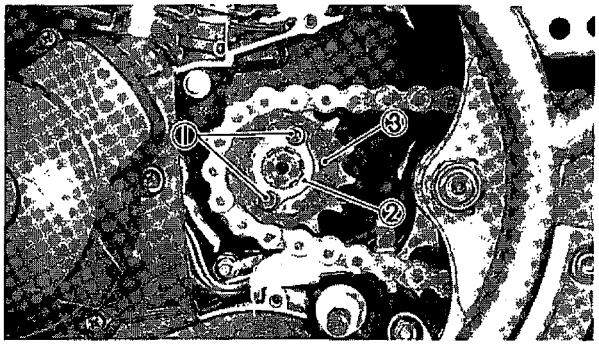
   - Crankcase ventilation hose ②



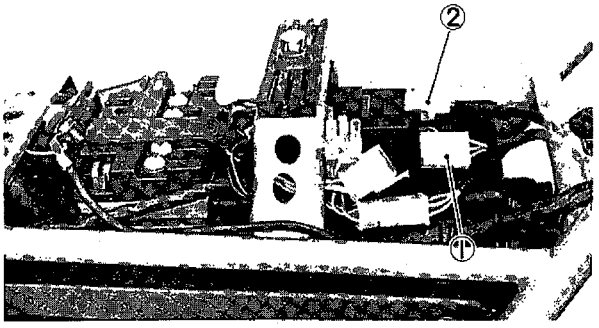
DRIVE CHAIN

1. Remove:
   - Bolt ①
   - Screw
   - Drive sprocket cover ②

2. Loosen:
   - Rear axle nut
   - Adjuster
   - Drive chain



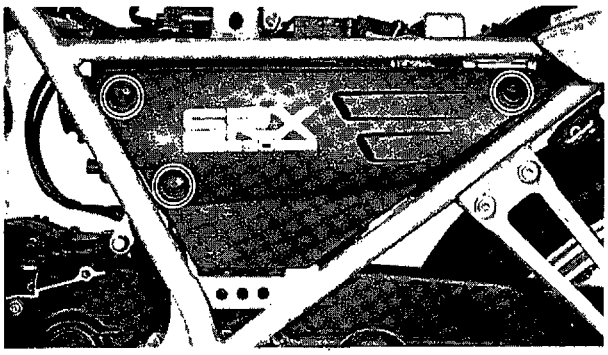
3. Remove:
   - Screws ①
   - Stopper ②
   - Drive chain sprocket ③



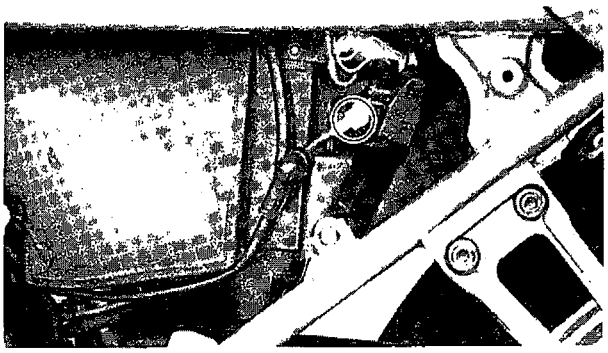
LEADS

1. Disconnect:
   - Pick up coil lead coupler ①
   - AC Generator lead coupler ②

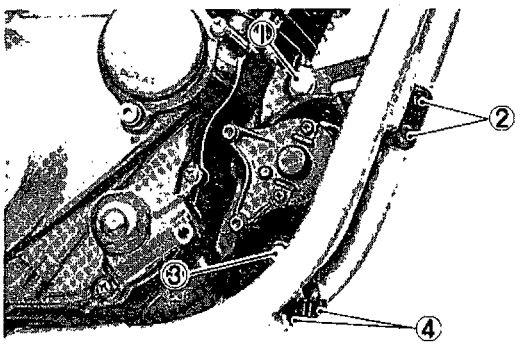
ENGINE REMOVAL



2. Remove:
   - Left side cover

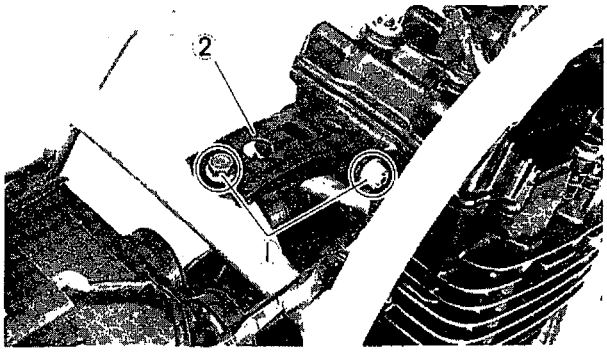


3. Disconnect:
   - Starter motor lead

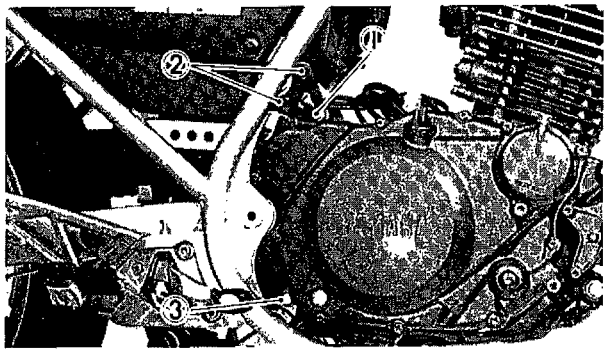


ENGINE REMOVAL

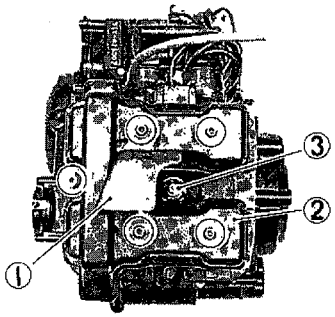
1. Place a suitable stand under the engine
2. Remove:
   - Front upper mounting bolt ①
   - Bracket bolt ②
   - Front lower mounting bolt ③
   - Bracket bolt ④



3. Remove:
   - Upper mounting bolts ①
   - Upper mounting bracket ②



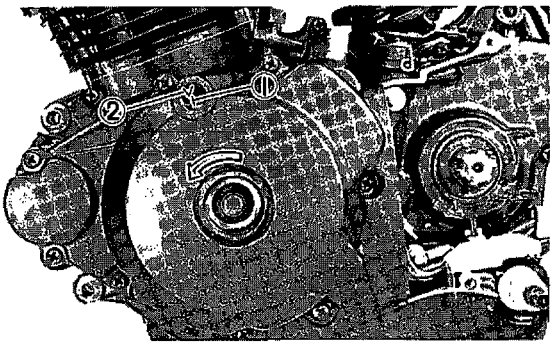
4. Remove:
   - Rear upper mounting bolt ①
   - Bracket bolts ②
   - Rear lower mounting bolt ③
   - Engine assembly
     (from right chassis.)

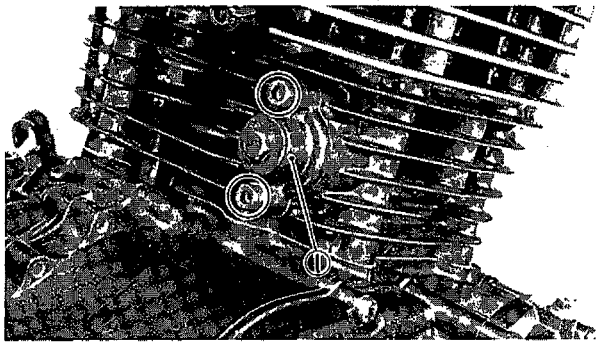


ENGINE DISASSEMBLY

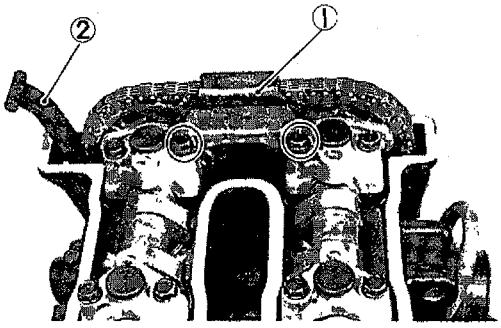
CAMSHAFT, CYLINDER HEAD AND CYLINDER

1. Remove:
   - Air baffle plate ①
   - Cylinder head cover ②
   - Spark plug ③
   - Timing plug
   - Left crankcase cover plug
2. Turn:
   - Crankshaft
     (Counterclockwise)
3. Align:
   - Flywheel "I" mark ①
     (with the stationary pointer ②)

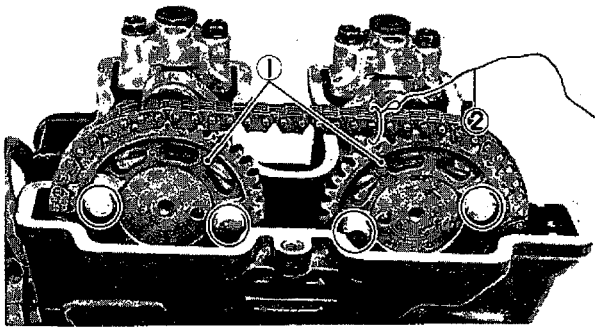




4. Remove:
   - Tensioner assembly ①



5. Remove:
   - Upper chain guide ①
   - Exhaust side chain guide ②

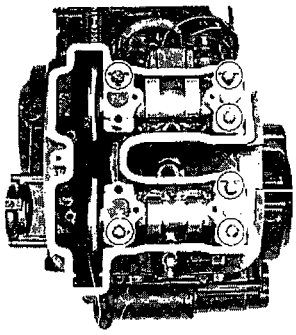


6. Remove:
   - Sprocket bolts
   - Sprockets ①

NOTE:

Fasten safety wire ② to the cam chain to prevent it from falling into the crankcase.

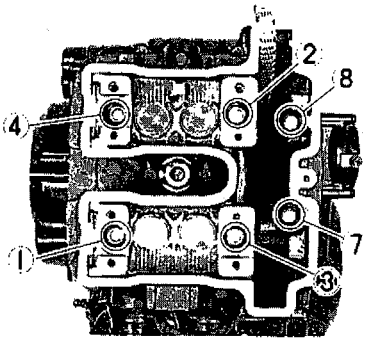
ENGINE DISASSEMBLY



7. Remove:
   - Cam caps
   - Camshafts

CAUTION:

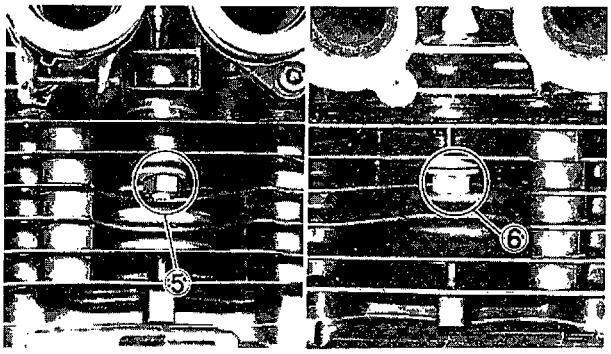
Do not rotate the camshaft or valve damage may occur.

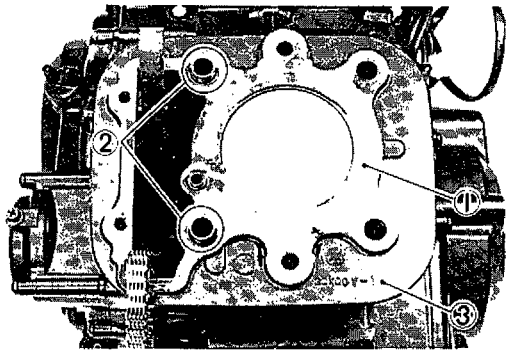


8. Remove:
   - Cylinder head

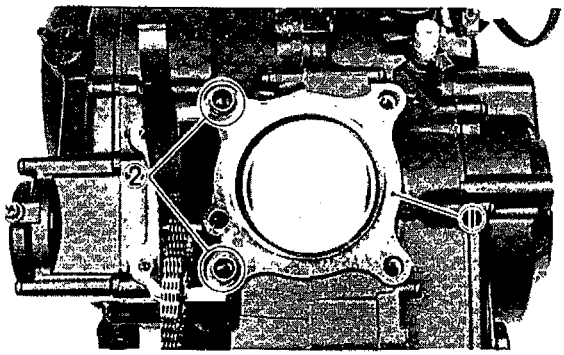
NOTE:

Loosen the bolts and nuts in their proper loosening sequence.





9. Remove:
   - Cylinder head gasket ①
   - Dowels ②
   - Cylinder ③



10. Remove:
    - Cylinder gasket ①
    - Dowels ②



PISTON

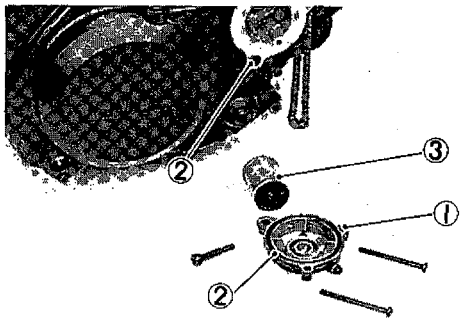
1. Remove:
   - Piston pin circlips

NOTE:

Before removing piston pin circlip, cover crankcase with a clean rag to prevent circlip from falling into crankcase cavity.

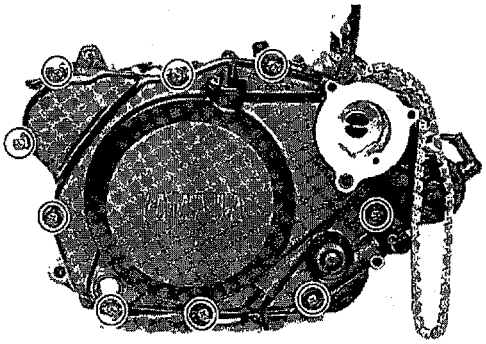
2. Remove:
   - Piston pins
   - Pistons

   Push piston pin from the opposite side, then pull it out.



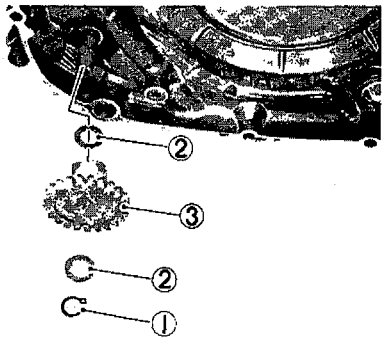
OIL FILTER

1. Remove:
   - Oil filter cover ①
   - O-ring ②
   - Oil filter ③



RIGHT CRANKCASE COVER

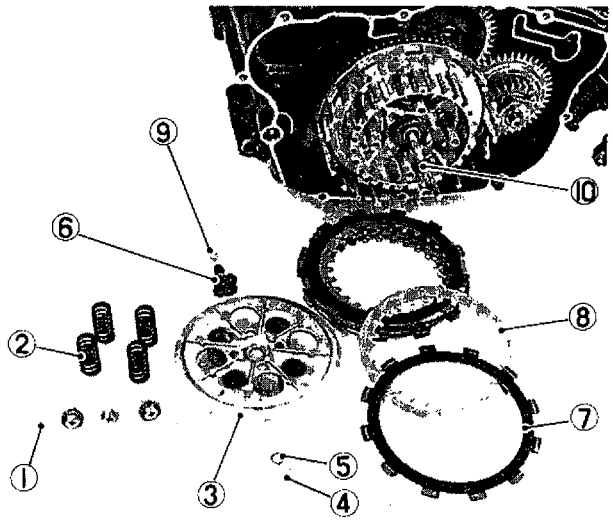
1. Remove:
   - Right crankcase cover
   - Gasket
   - Dowels



2. Remove:
   - Circlip ①
   - Washer ②
   - Tachometer driven gear ③

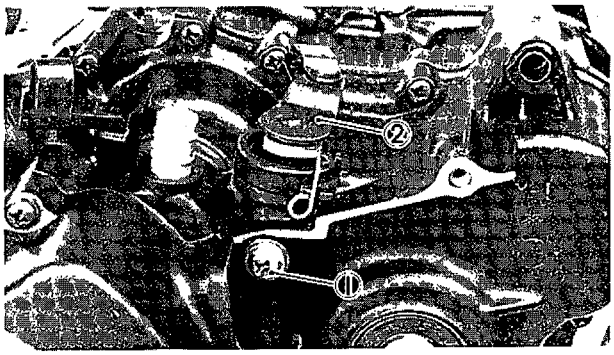
   (from the right crankcase cover.)

ENGINE DISASSEMBLY

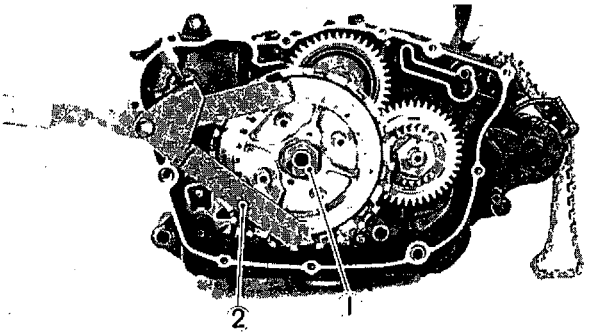


CLUTCH

1. Remove:
   - Clutch spring holding screws ①
   - Clutch springs ②
   - Pressure plate ③
   - Nut ④
   - Washer ⑤
   - Push rod #1 ⑥
   - Friction plates ⑦
   - Clutch plates ⑧
   - Push rod ball ⑨
   - Push rod #2 ⑩

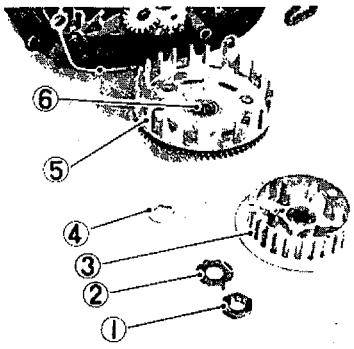


2. Remove:
   - Screw ①
   - Clutch push lever axle assembly ②

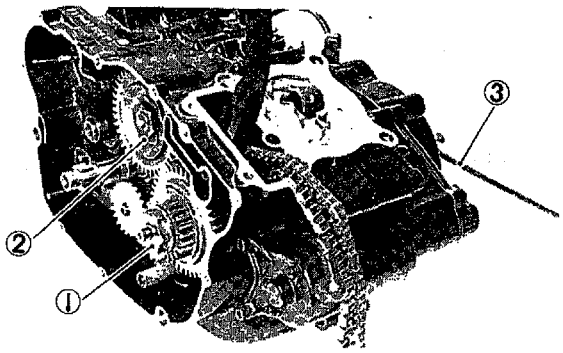


3. Loosen:
   - Clutch boss securing nut ①

   Use Universal Clutch Holder ② (90890-04086).



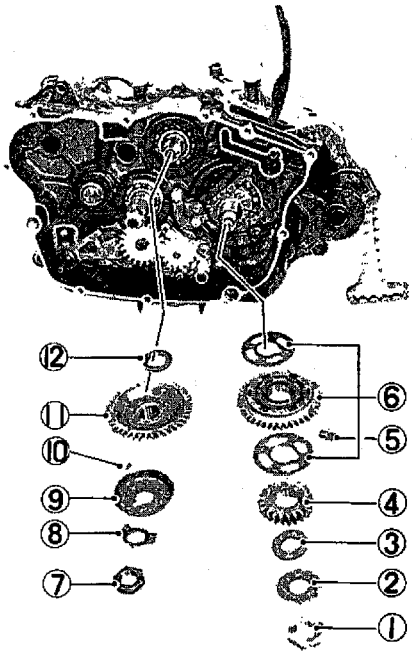
4. Remove:
   - Clutch boss securing nut ①
   - Lock washer ②
   - Clutch boss ③
   - Washer ④
   - Primary driven gear ⑤
   - Bearing ⑥



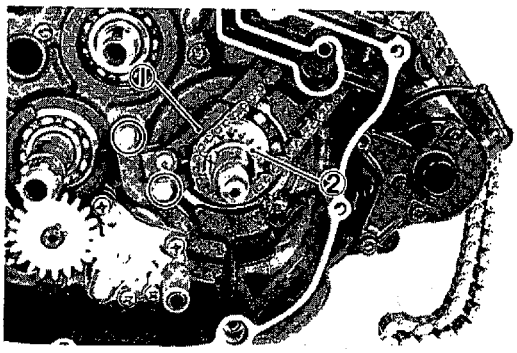
PRIMARY DRIVE GEAR AND BALANCER DRIVEN GEAR

1. Loosen:
   - Primary drive gear securing nut ①
   - Balancer driven gear securing nut ②

   Lock the crankshaft by tool ③

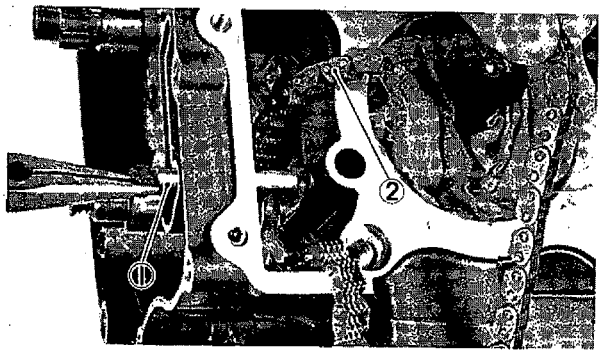


2. Remove:
   - Nut ①
   - Lock washer ②
   - Washer ③
   - Primary drive gear ④
   - Key ⑤
   - Balancer drive gear assembly ⑥
   - Nut ⑦
   - Lock washer ⑧
   - Breather plate ⑨
   - Key ⑩
   - Balancer driven gear ⑪
   - Washer ⑫



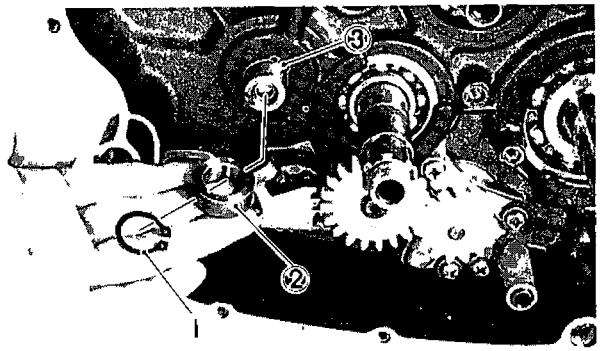
INTAKE SIDE CHAIN GUIDE AND CAM CHAIN

1. Remove:
   - Intake side chain guide ①
   - Chain drive gear ②



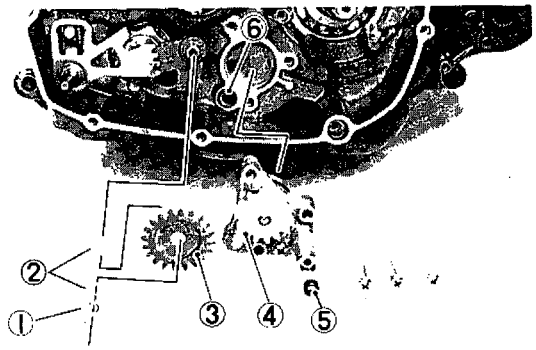
2. Remove:
   - Oil pipe ①
   - Cam chain ②

ENGINE DISASSEMBLY

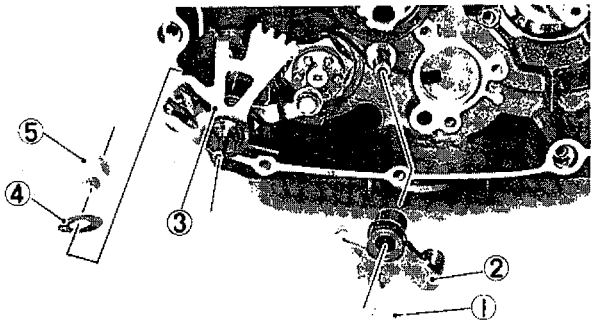


SPACER AND OIL PUMP

1. Remove:
   - Circlip ①
   - Spacer ②
   - Circlip ③
     (from the drive axle)

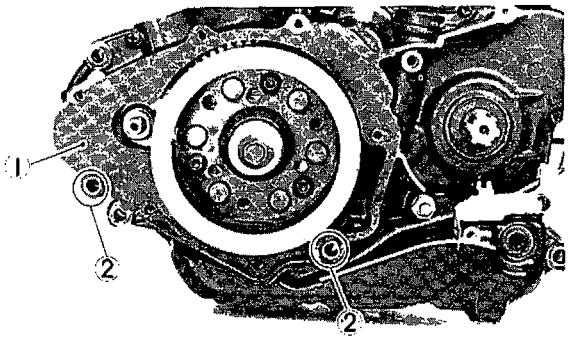


2. Remove:
   - Circlip ①
   - Washer ②
   - Oil pump idle gear ③
   - Oil pump assembly ④
   - Oil seal ⑤
   - O-ring ⑥



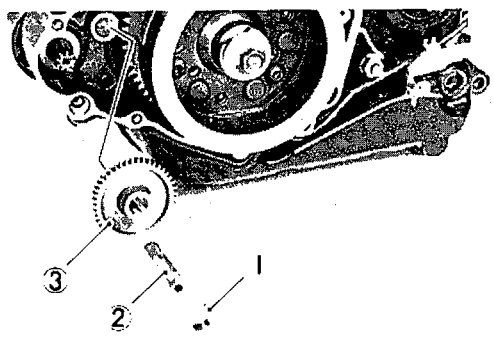
CHANGE LEVER

1. Remove:
   - Circlip ①
   - Change lever 2 ②
   - Change lever assembly ③
   - Washer ④
   - Spacer ⑤

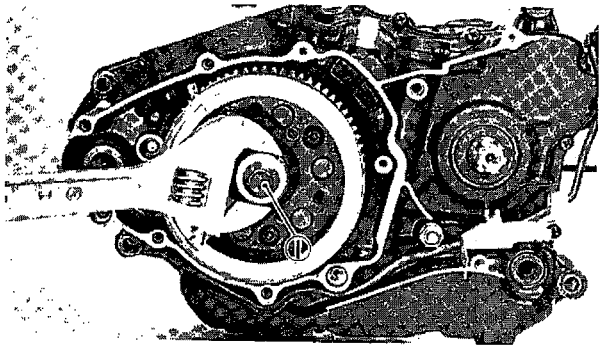


LEFT CRANKCASE COVER, AC GENERATOR AND STARTER MOTOR

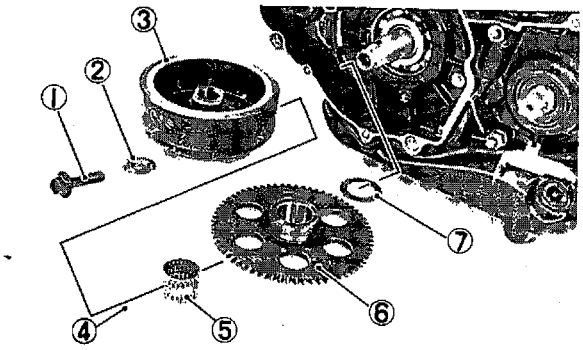
1. Remove:
   - Left crankcase cover
   - Gasket ①
   - Dowels ②



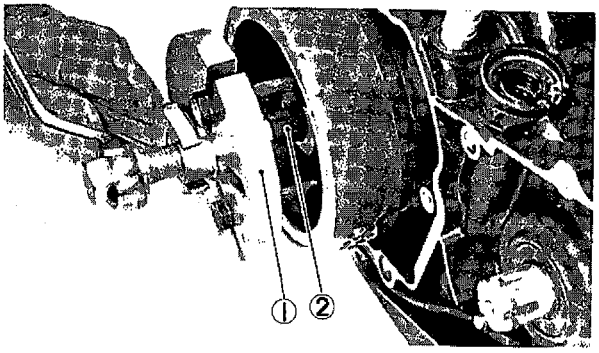
2. Remove:
   - Collar ①
   - Shaft ②
   - Starter idle gear ③



3. Loosen:
   - Bolt ①

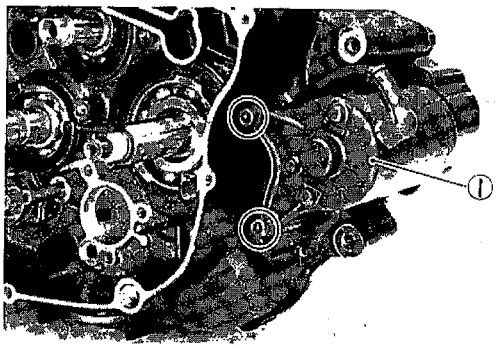


4. Remove:
   - Bolt ①
   - Washer ②
   - AC Generator rotor ③
   - Key ④
   - Bearing ⑤
   - Starter driven gear ⑥
   - Washer ⑦

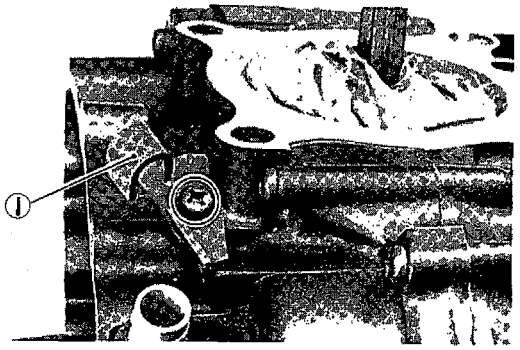


NOTE:

Use 3-Way Universal Puller ① (P/N 90890-01362) and Attachment ② (P/N 90890-01382) to remove the rotor



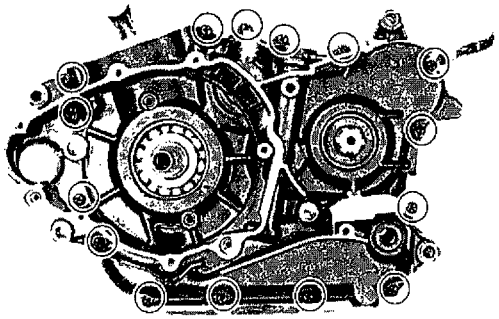
5. Remove:
   - Starter motor ①



CRANKCASE

1. Remove:
   - Clutch cable bracket ①

ENGINE DISASSEMBLY



2. Remove:
   - Crankcase holding screws

NOTE:

Loosen each screw 1/4 turn, and remove them after all are loosened.

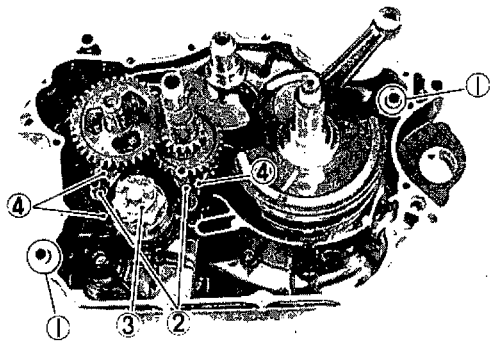
3. Remove:
   - Right crankcase
     (using two screw drivers)

NOTE:

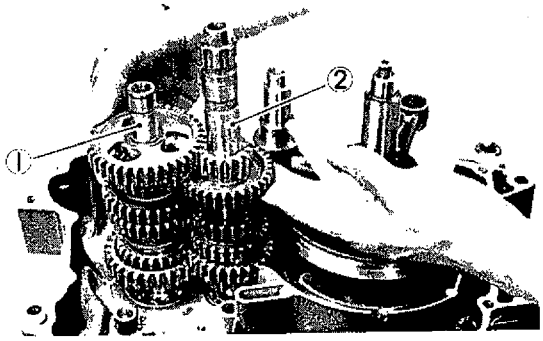
As pressure is applied, alternately tap on the balancer shaft, transmission shafts, and shift cam.

CAUTION:

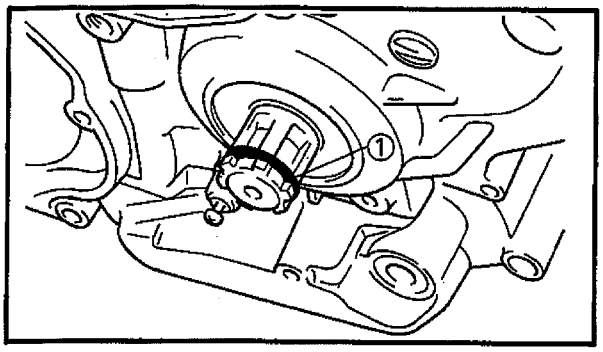
Use soft hammer to tap on the case half. Tap only on reinforced portions of case. Do not tap on gasket mating surface. Work slowly and carefully. Make sure the case halves separate evenly. If one end "hangs up," take pressure off the push screw, realign, and start over. If the cases do not separate, check for a remaining case screw or fitting. Do not force.



4. Remove:
   - Dowels ①
   - Shift shafts ②
   - Shift cam ③
   - Shift forks ④

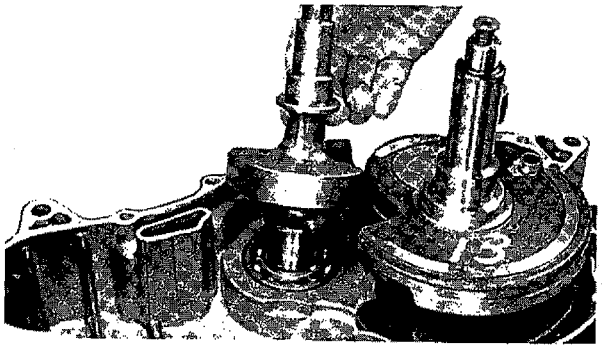


5. Remove:
   - Drive axle ① and main axle ② assembly

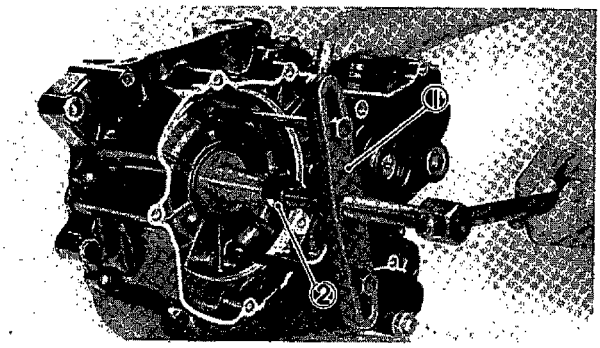


NOTE:

When removing the drive axle from the crankcase, pay attention to the crankcase oil seal lip. A recommended practice is to fit the "O-ring" ① in the drive axle groove and apply grease over the fitted area before removing drive axle.



6. Remove:
   - Balancer shaft



7. Remove:
   - Crankshaft

   Use Crankcase Separator ① (90890-01135) and Flywheel Puller Attachment (90890-01382) ②

BEARINGS AND OIL SEALS

NOTE:

- It is not necessary to remove bearings and oil seals unless damaged. See Bearings and oil seals (INSPECTION AND REPAIR.)
- To facilitate bearing removal and installation, first heat the cases to approximately 95° ~ 125°C (205° ~ 257°F) using an oven. Bring the case up to proper temperature slowly.

1. Remove
   - Oil seals

CAUTION:

- **Use a screwdriver to pry out the seal.**
- **Place a piece of wood under the screwdriver to prevent damage to the case.**

2. Remove:
   - Bearings

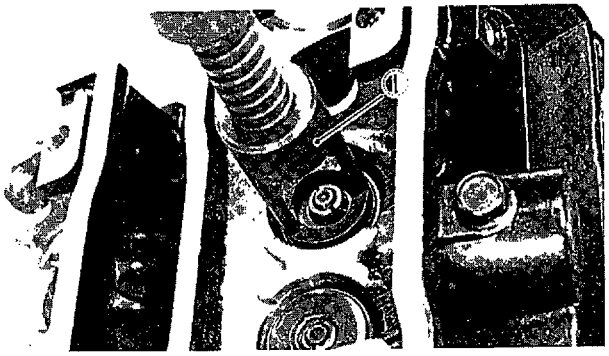
INSPECTION AND REPAIR

CYLINDER HEAD

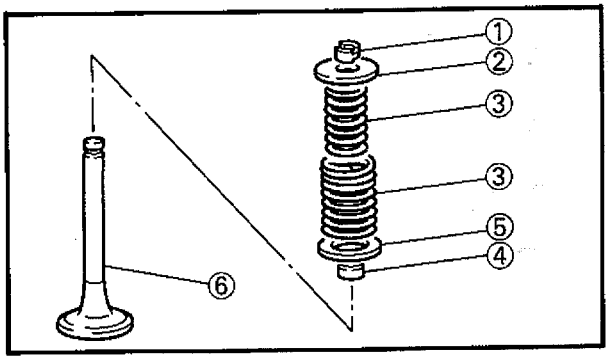
1. Remove:
   - Valve pads
   - Lifters

NOTE:

Identify each lifter and pad position very carefuly so that it can be reinstalled in its original place.



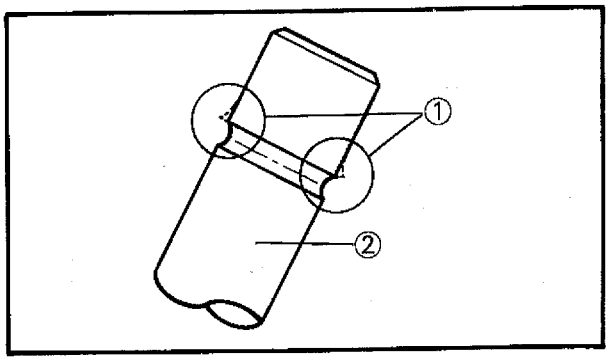
2. Attach:
   - Valve Spring Compressor (90890-04019) ①



3. Remove:
   - Valve retainers ①
   - Valve spring seat ②
   - Valve springs ③
   - Oil seal ④
   - Valve spring seat ⑤
   - Valve ⑥

NOTE:

Deburr any deformed valve stem end. Use an oil stone to smooth the stem end.

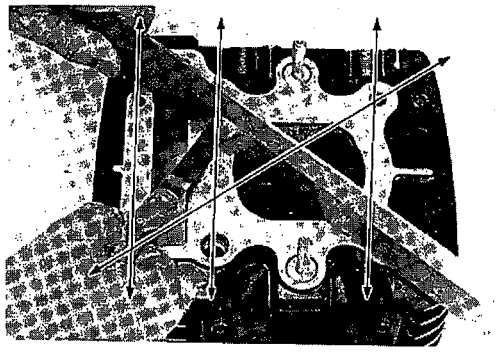


① Deburr
② Valve stem

4. Eliminate:
   - Carbon deposit
     (from combustion chamber)
     Use rounded scraper

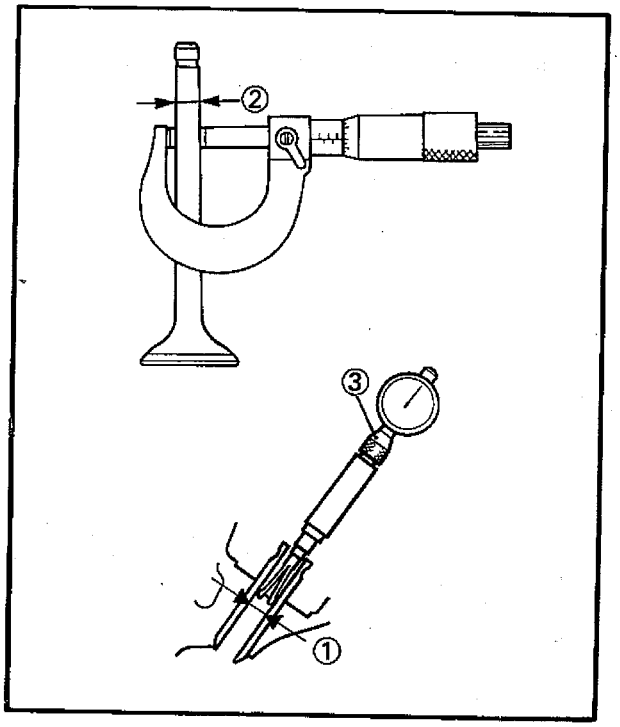
NOTE:

Do not use a sharp instrument and avoid damaging or scratching:
- Spark plug threads
- Valve seat
- Aluminum



5. Measure:
   • Warpage
   Exceeds allowable limit → Resurface.

	Cylinder Head Warpage: **Less than 0.03 mm (0.0012 in)**



VALVE, VALVE GUIDE, VALVE SEATS, AND VALVE SPRING

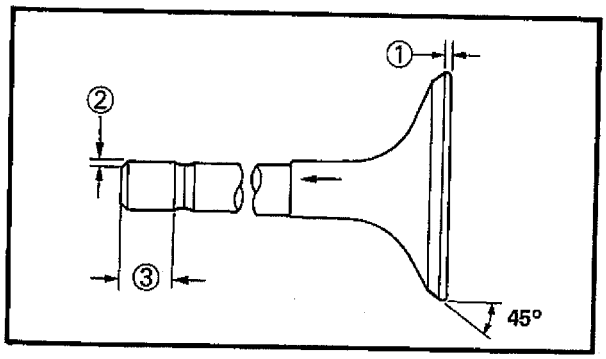
1. Measure:
   • Valve stem clearance

Valve stem clearance =
Valve guide inside diameter ① − Valve stem diameter ②

Out of specification → Replace valve or guide.

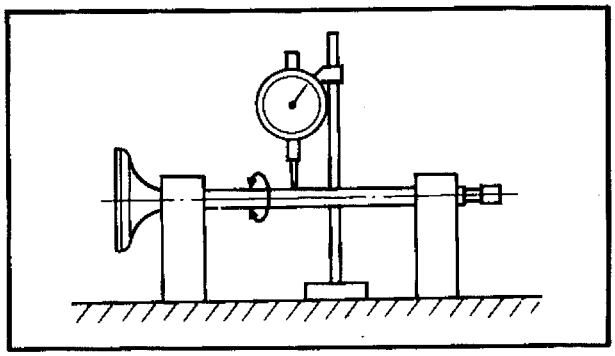
	Valve Stem Clearance
Intake	0.010 ~ 0.037mm (0.0004 ~ 0.0015 in)
Exhaust	0.025 ~ 0.040mm (0.00098 ~ 0.0016 in)

③ Bore gauge



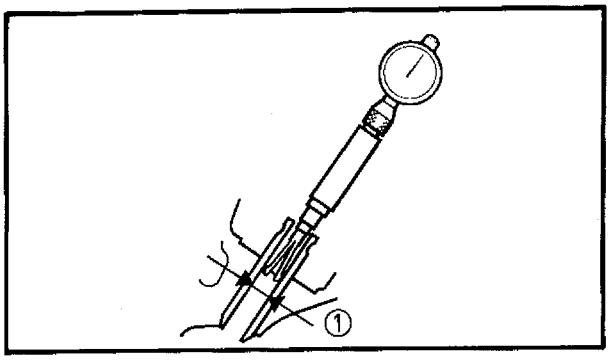
4. Measure:
   • Valve face:
   Pitting/Wear → Regrind.
   Out of specification → Raplace.

Minimum Thickness (Service limit) ①: **0.7 mm (0.0276 in)** **Beveled ②:** **0.5 mm (0.020 in)** **Minimum Length (Service limit) ③: 4.0 mm (0.157 in)**



3. Check:
   - Valve stem end
     Mushroom shape or diameter larger than rest of stem→Replace.
   - Runout
     Out of specification→Replace.

Maximum Valve Stem Runout:
0.01 mm (0.0004 in)



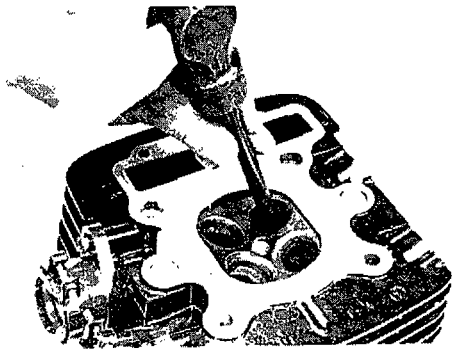
4. Measure:
   - Valve guide (inside diameter) ①
     Out of specification→Replace.

Guide Inside Diameter:
5.500 – 5.512 mm
(0.2165 – 0.2170 in)

5. Inspect:
   - Valve guide
     Wear/Oil leakage→Replace.

NOTE:

Heat the cylinder head in an oven to 100°C (212°F) to ease valve guide removal and reinstallation and to maintain correct interference fit.

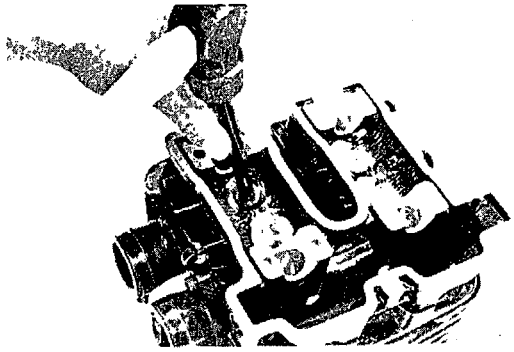


Valve Guide Replacement

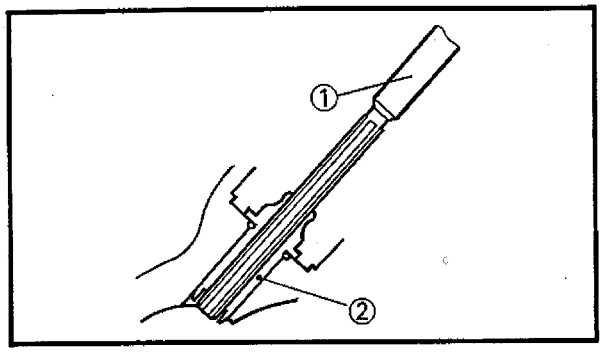
1. Remove:
   - Valve guide
     Use Valve Guide remover (90890-01122) ①.

NOTE:

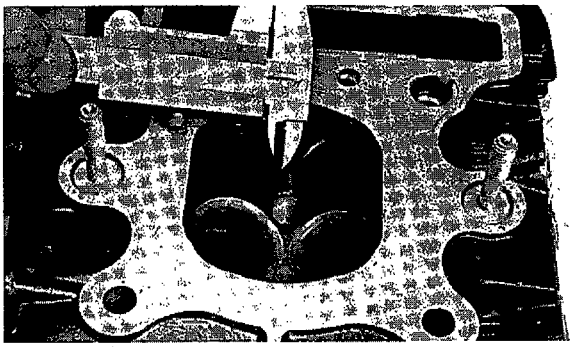
- Always replace valve guide if valve is replaced.
- Always replace oil seal if valve is removed.



2. Install:
   - Valve guide (new)
     Use Valve Guide Installer (90890-04015) ①.



3. Bore valve guide ② to obtain proper valve stem clearance.
   Use 5.5 mm Reamer (90890-01196) ①.

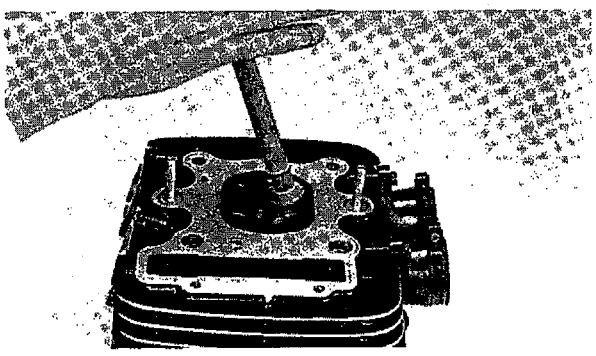


Valve Seat

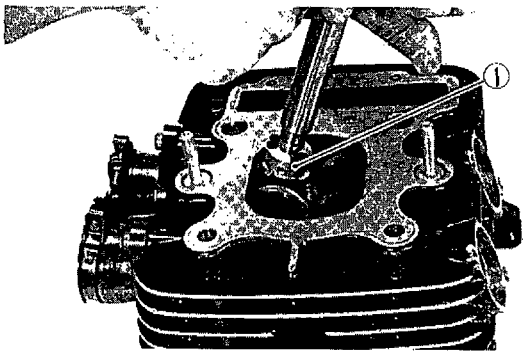
1. Inspect:
   - Valve seat
     Pitting/Wear→Cut.
2. Measure:
   - Valve seat width ①
     Out of specification→Follow next steps.

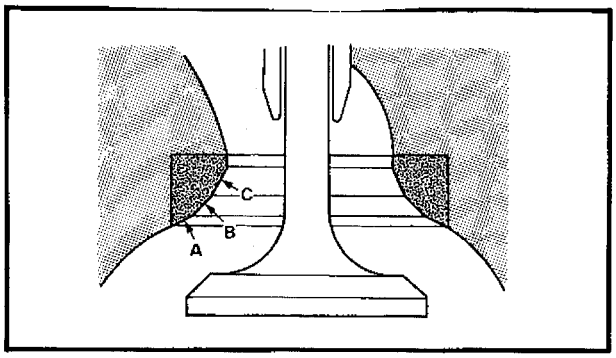
	Standard Width	Wear Limit
Valve Seat Width	1.0±0.1 mm (0.039±0.0039 in)	2.0 mm (0.080 in)

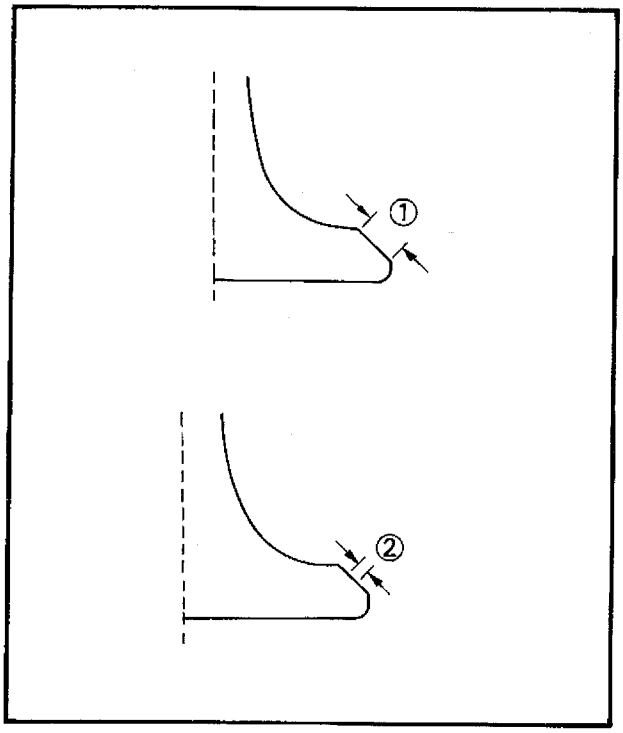
3. Apply:
   - Mechanic's bluing dye (Dykem)
     (to valve and seat)
   - Fine grinding compound (Small amount)
     (to valve face surface)
4. Position:
   - Valve
     (into cylinder head)



5. Spin it rapidly back and forth, then lift valve and clean off all grinding compound.
6. Inspect:
   - Valve seat surface
     Wherever valve seat and valve face made contact, bluing will have been removed.







7. Measure:
   - Valve seat width
     Valve seat width must be uniform in contact area.
     Out of specification→Cut.
8. Cut valve seat.

NOTE:

Cut valve seat using valve seat cutter ① if valve seat width exceeds limit or if valve seat is pitted or worn.

CAUTION:

When twisting cutter, keep an even downward pressure to prevent chatter marks.

Valve seat recutting steps are necessary if:

- Valve seat is uniform around perimeter of valve face but too wide or too narrow or not centered on valve face.

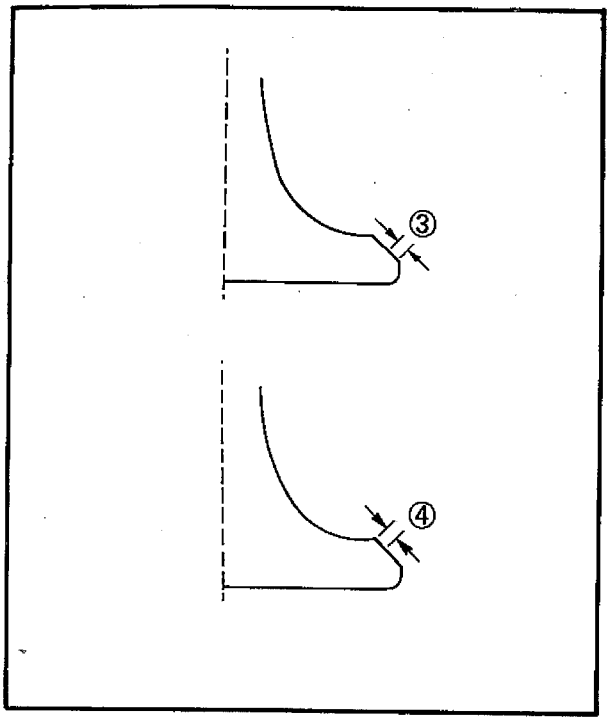
Cut Valve Seat As Follows:	
Section A	30° Cutter
Section B	45° Cutter
Secton C	60° Cutter

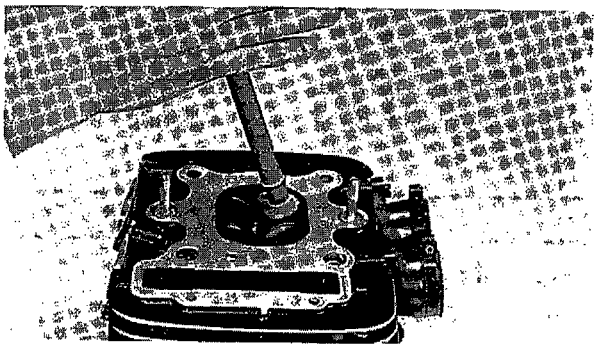
- Valve face indicates that valve seat is centered on valve face but is wide ①.

Valve Seat Cutter Set		Desired Result
Use	30° Cutter	to reduce valve seat width.
	60° Cutter	

- Valve seat is in the middle of the valve face but too narrow ②.

Valve Seat Cutter Set		Desired Result
Use	45° Cutter	to achieve a uniform valve seat width (Standard specifications).





- Valve seat is too narrow and right up near valve margin ③.

Valve Seat Cutter Set		Desired Result
Use	30° Cutter, first	to obtain correct seat width.
	45° Cutter	

- Valve seat is too narrow and is located down near the bottom edge of the valve face ④.

Valve Seat Cutter Set		Desired Result
Use	60° Cutter, first	to obtain correct seat width.
	45° Cutter	

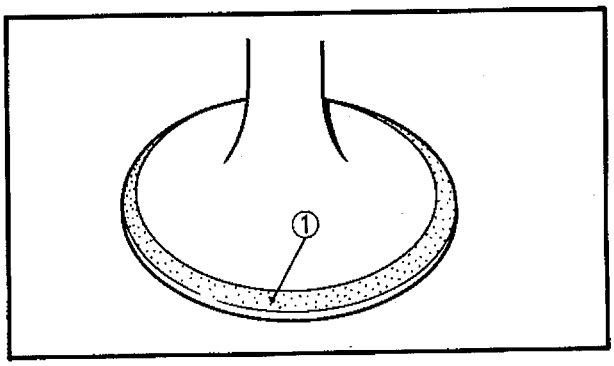
NOTE:

Lap valve/valve seat assembly if:
- Valve face/valve seat are used or severely worn.
- Valve and valve guide has been replaced.
- Valve seat has been cut.

Valve/Valve Seat Assembly Lapping

1. Apply:
   - Coarse lapping compound (Small amount) (to valve face)
2. Position
   - Valve (in cylinder head)
3. Rotate:
   - Valve

   Turn until valve and valve seat are evenly polished, then clean off compound.
4. Repeat above steps with fine compound and continue lapping until valve face shows a completely smooth surface uniformly.

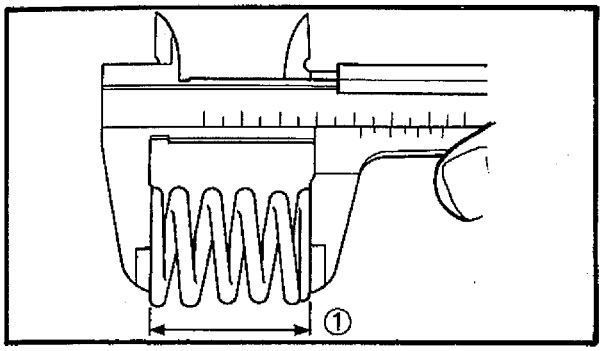


5. Eliminate:
   • Compound
   (from valve face)
6. Apply:
   • Mechanic's bluing dye (Dykem) ①
   (to valve face and seat)

7. Rotate:
   • Valve
   Valve must make full seat contact indicated by grey surface all around valve face where bluing was removed.
8. Apply:
   • Solvent
   (into each intake and exhaust port)
   Leakage past valve seat → Replace valve until seal is complete.

NOTE:
- Pour solvent into intake and exhaust ports only after completion of all valve work and assembly of head parts.

Relapping steps:
- Reassemble head parts.
- Repeat lapping steps using fine lapping compound.
- Clean all parts thoroughly.
- Reassemble and check for leakage again using solvent.
- Repeat steps as often as necessary to effect a satisfactory seal.

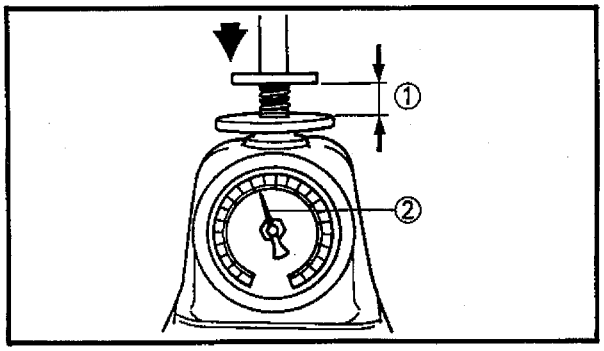


Valve Spring Measurement

1. Measure:
   - Valve spring free length ①

   Out of specification→Replace.

Valve Spring Free Length			
Inner Spring		Outer Spring	
Standard	Wear limit	Standard	Wear limit
37.4 mm (1.472 in)	35.4 mm (1.394 in)	39.85 mm (1.569 in)	37.85 limit (1.490 in)

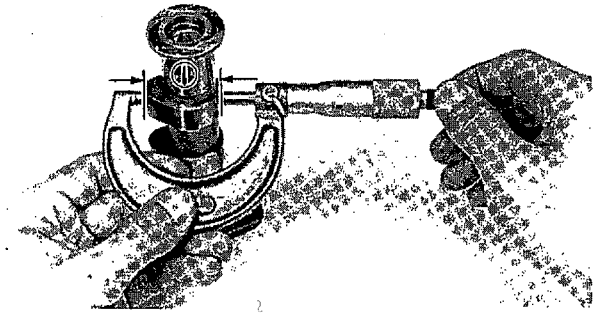


2. Measure:
   - Valve spring installed force ②

   Out of specification→Replace.

① Installed length

Valve Spring Installed Force			
Inner Spring		Outer Spring	
①	②	①	②
31.8 mm (1.252 in)	6.40 kg (14.1 lb)	33.8 mm (1.331 in)	13.1 kg (28.88 lb)



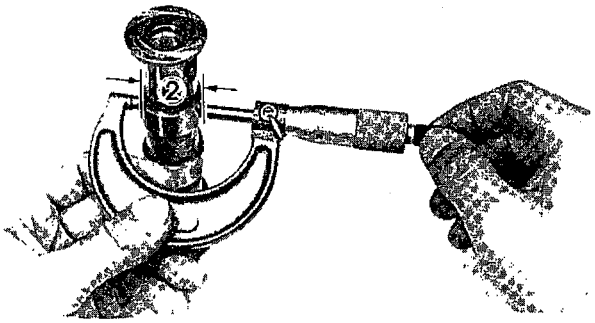
CAMSHAFT, CAM CHAIN, AND CAM SPROCKET

Camshaft

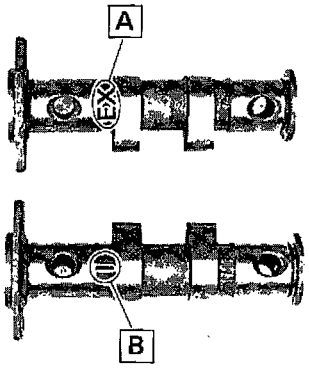
1. Measure:
   - Large cam lobe length ①
   - Small cam lobe length ②

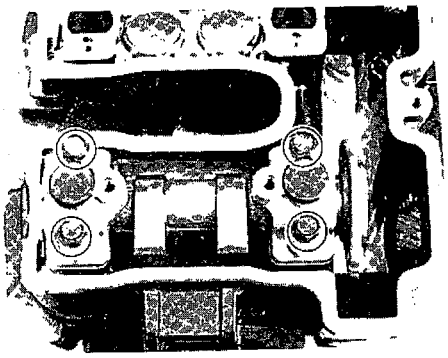
   Use a micrometer.

   Out of specification→Replace.



	Intake	Exhaust
①	35.75 ~ 35.85 mm (1.407 ~ 1.411 in)	35.75 ~ 35.85 mm (1.407 ~ 1.411 in)
②	27.998 ~ 28.098 mm (1.102 ~ 1.106 in)	27.998 ~ 28.098 mm (1.102 ~ 1.106 in)





Camshaft/Cap Clearance Measurement

1. Install:
   - Camshaft
2. Position:
   - Strip of Plastigage® (YU-33210) (onto camshaft)

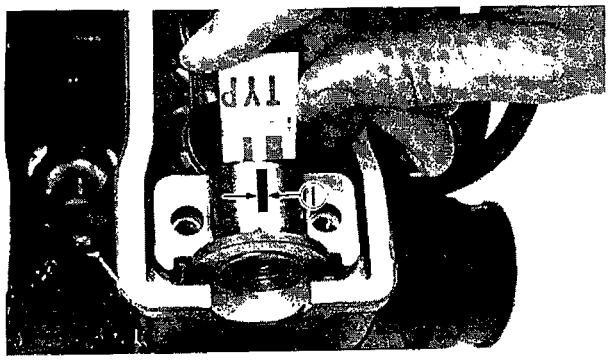
A For Exhaust
B For Intake

3. Install:
   - Camshaft caps
4. Tighten:
   - Camshaft cap bolts ①

Camshaft Cap Bolt:
10 Nm (1.0 m•kg, 7.2 ft•lb)

NOTE:

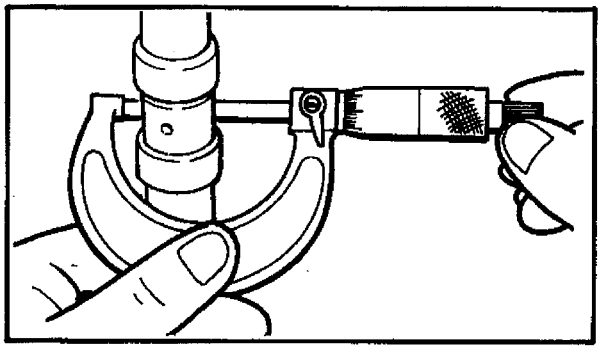
Do not turn the camshaft when measuring clearance with Plastigage.



5. Remove:
   - Camshaft caps
6. Measure:
   - Width of Plastigage® ①

   Out of specification → Follow step 7.

Camshaft-to-cap Clearance:
Standard: 0.020 ~ 0.054 mm (0.0008 ~ 0.0021 in)
Maximum: 0.150 mm (0.006 in)

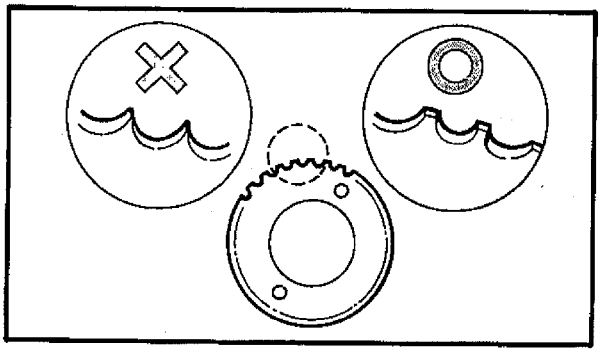


7. Measure:
   • Camshaft bearing surface diameter
   Use a micrometer.
   Out of specification → Replace camshaft.
   Within specification → Replace cylinder head.

Camshaft Bearing Surface Diameter:
Standard: 24.967 ~ 24.980 mm (0.9830 ~ 0.9835 in)
Cam Cap Inside Diameter:
Standard: 25.00 ~ 25.021 mm (0.9843 ~ 0.9851 in)

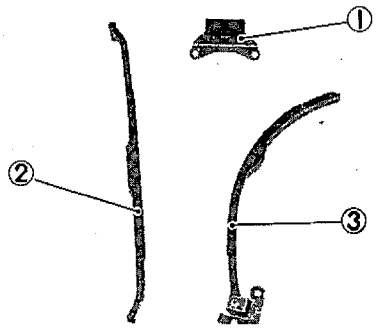
Cam Chain

1. Inspect:
   • Cam chain
   Chain stretch/Cracks → Replace.



Cam Sprockets

1. Inspect:
   • Cam sprockets
   Wear/Damage → Replace.

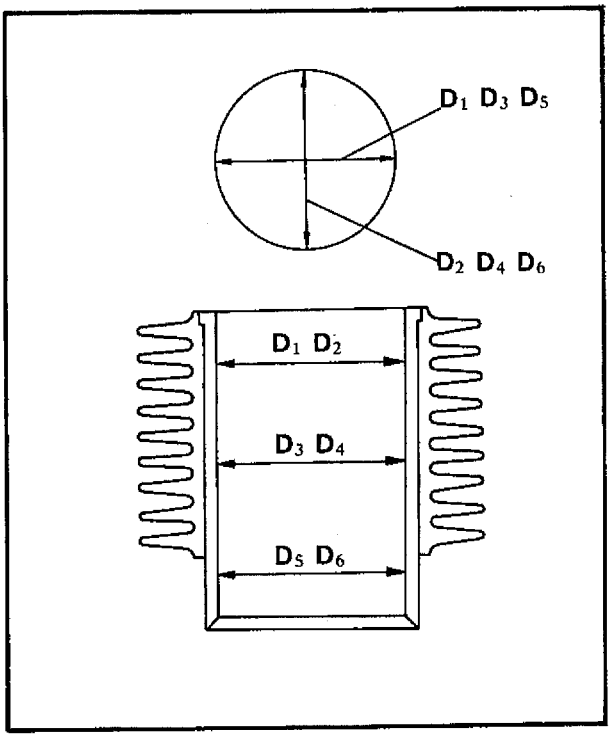


Chain Guide

1. Inspect:
   • Upper chain guide ①
   • Exhaust side chain guide ②
   • Intake side chain guide ③
   Wear → Replace.

CYLINDER

1. Inspect:
   • Cylinder walls
   Vertical scratches → Rebore or Replace cylinder.
2. Measure:
   • Cylinder inside diameter



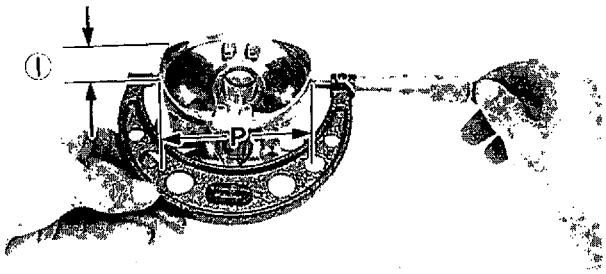
NOTE:

Obtain measurements at three depths by placing measurig instrument parallel to and at right angles to crankshaft.

Out of specification→Rebore cylinder, and replace piston and piston rings.

	Standard	Wear limit
Cylinder Bore: C	73.0 mm (2.874 in)	73.1 mm (2.878 in)
Cylinder Taper: T	—	0.005 mm (0.0002 in)

C = Maximum D
T = Maximum D_1, D_2 – Minimum D_5, D_6



PISTON, PISTON RING, AND PISTON PIN

Piston

1. Measure:
   • Piston skirt diameter "P"

NOTE:

Measure the piston skirt diameter where the distance 1.0 mm (0.0394 in) ① from the piston bottom edge.

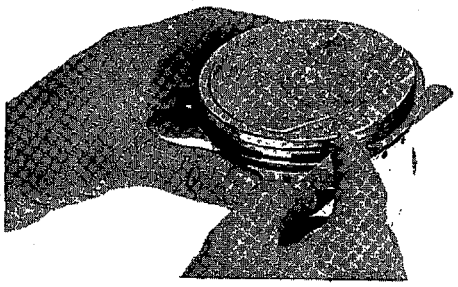
	Piston size A
Standard	73.0 mm (2.874 in)
Oversize 2	73.50 mm (2.894 in)
Oversize 4	74.00 mm (2.913 in)

2. Measure:
   • Piston clearance

Piston Clearance =
Cylinder inside diameter "C" – Piston skirt diameter "P"

Out of specification→Rebore cylinder, and replace piston and piston rings.

	Piston Clearance: **0.040~0.060 mm** **(0.00157~0.00246 in)**



Piston Ring

1. Measure:
   - Ring side clearance
     Use a feeler gauge.
     Out of specification→Replace piston.

NOTE:

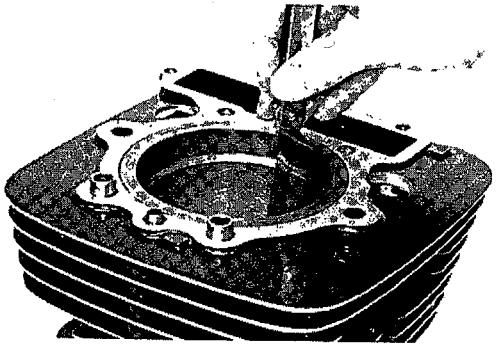
- Clean carbon from piston ring grooves and rings before measuring side clearance.

	Piston Ring Side Clearance:
Top	0.04~0.08 mm (0.0016~0.0031 in)
2nd	0.03~0.07 mm (0.0012~0.0028 in)
Oil	0.02~0.06 mm (0.0008~0.0024 in)

2. Position:
   - Piston ring
     (in cylinder)

NOTE:

Insert a ring into cylinder, and push it approximarely 20 mm (0.8 in) into cylinder. Push ring with piston crown so that ring will be at a right angle to cylinder bore.

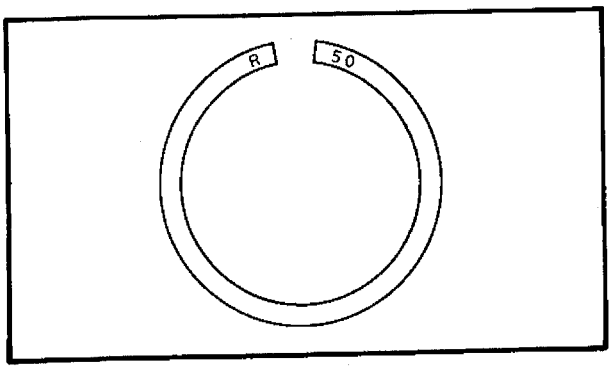


3. Measure:
   - Ring end gap
     Out of specification→Replace.

NOTE:

You cannot measure end gap on expander spacer of oil control ring. If oil control ring rails show excessive gap, replace all three rings.

	Standard
Top ring	0.2~0.35 mm (0.008~0.014 in)
2nd ring	0.2~0.35 mm (0.008~0.014 in)

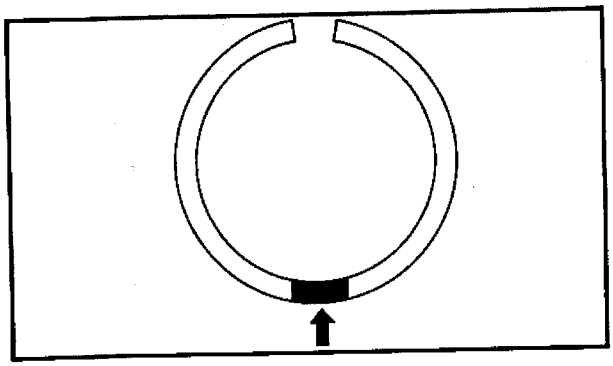


Piston Ring Oversize

•Top and 2nd piston ring

Oversize top and middle ring sizes are stamped on top of ring.

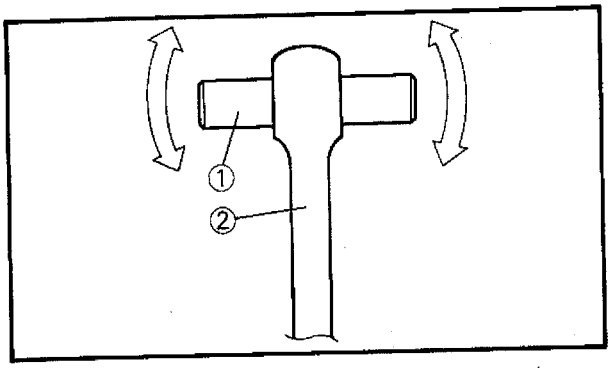
Oversize 2	0.50 mm (0.0197 in)
Oversize 4	1.00 mm (0.0394 in)



•Oil control ring

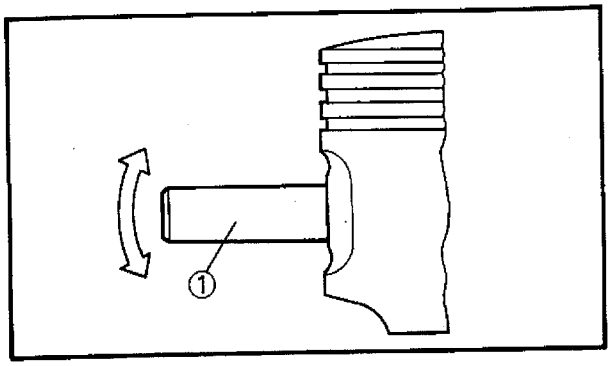
Expander spacer of bottom ring (oil control ring) is color-coded to identify sizes.

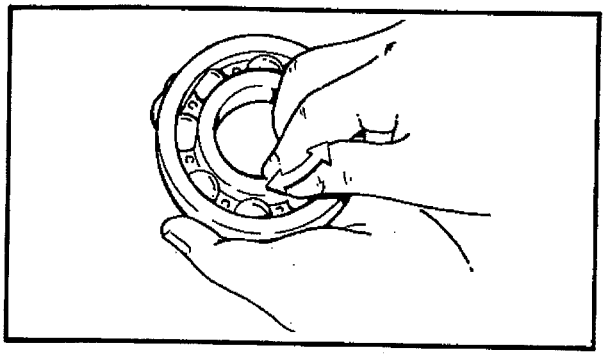
Size	Color
Oversize 2	Blue
Oversize 4	Yellow

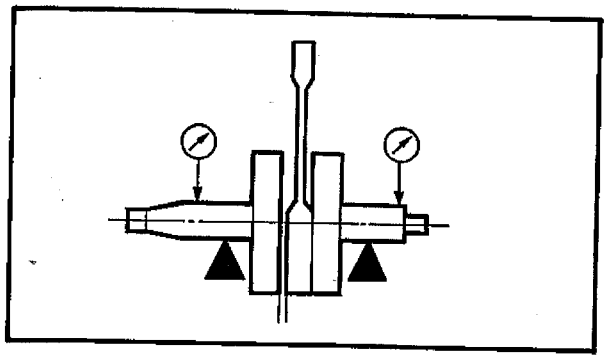


Piston Pin

1. Lubricate:
   •Piston pin (Lightly)
2. Install:
   •Piston pin ①
   (into small end of connecting rod ②)
3. Check:
   •Free play
   Free play→Inspect connecting rod for wear.
   Wear→Replace connecting rod and piston pin.
4. Position:
   •Piston pin ①
   (into piston)
5. Check:
   •Free play
   (into piston)
   Free play→Replace piston pin and/or piston.







CRANKSHAFT AND CONNECTING ROD

Crankshaft Bearings

1. Inspect
   - Bearing races
     Pitting, rust, scoring→Replace.

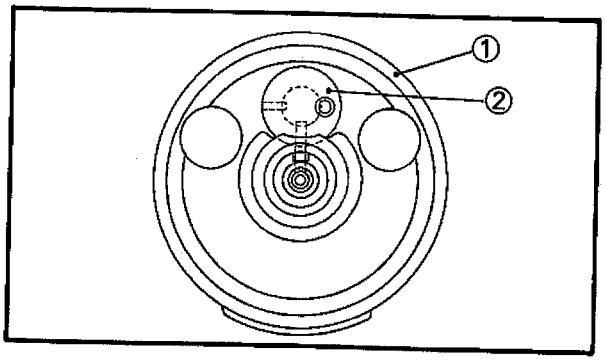
NOTE:

- Clean and dry bearing before checking.
- Lubricate bearings immediately after examining them to prevent rust.

Crankshaft Runout

1. Place both ends of crankshaft on V-blocks.
2. Rotate:
   - Crankshaft
3. Measure:
   - Crankshaft runout
     (at main journal bearings)
     Use a Dial Gauge (90890-03097).

Maximum Crankshaft Runout:
0.03 mm (0.001 in)



Crankshaft Assembly

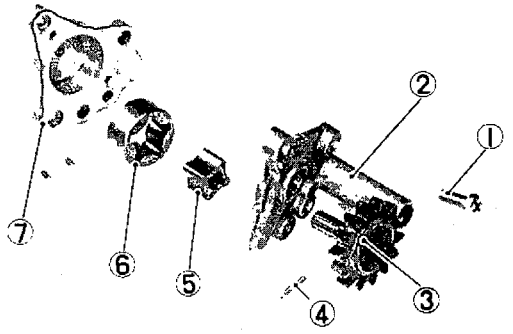
1. Install:
   - Crank web ①
   - Crank pin ②

NOTE:

Make sure oil passages of crank and crank pin are lined up during assembly.

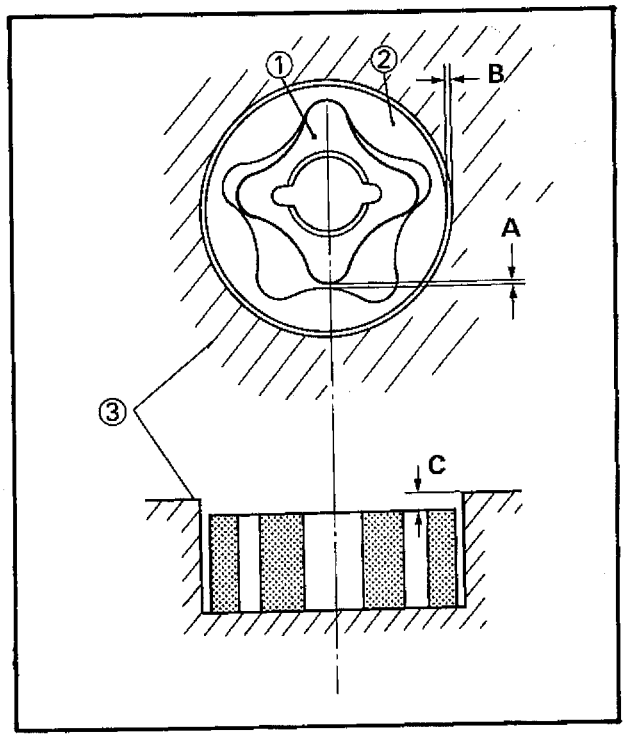
CAUTION:

The crankshaft oil passage and the crank pin oil passage MUST be properly alined. The deviation of one center line from the other must be LESS THAN 1 mm (0.04 in).



OIL PUMP

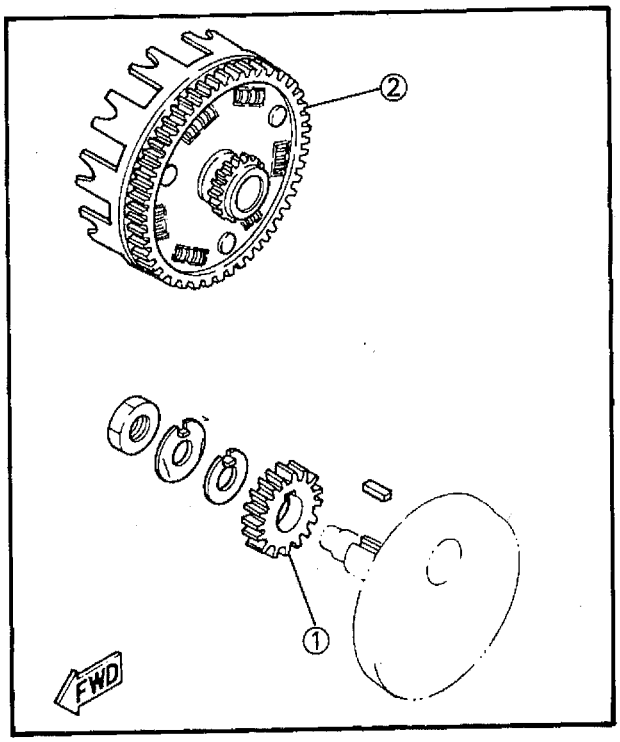
1. Remove:
   - Screw ①
   - Pump cover ②
   - Pump shaft ③
   - Pin ④
   - Inner rotor ⑤
   - Outer rotor ⑥
   - Pump housing ⑦



2. Measure:
   - Clearance "A" (between inner rotor ① and outer rotor ②)
   - Clearance "B" (between outer rotor ② and pump housing ③)
   - Clearance "C" (between pump housing ③ and rotors ①, ②)

   Out of specification→Replace oil pump.

	Oil Pump Clearance:
Clearance A	0.15 mm (0.00591 in)
Clearance B	0.03~0.09 mm (0.0012~0.0035 in)
Clearance C	0.03~0.09 mm (0.0012~0.0035 in)

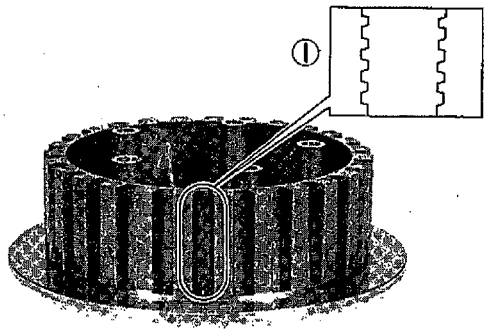


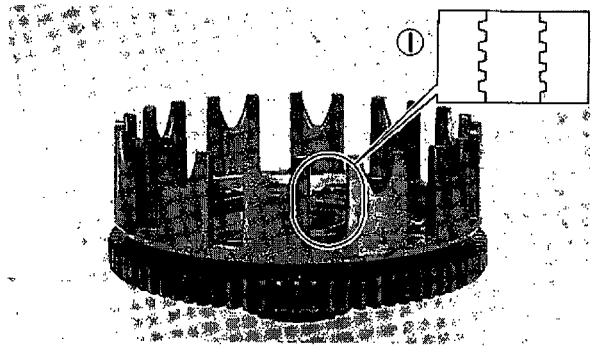
PRIMARY DRIVE

1. Inspect:
   - Primary drive gear ①
   - Primary driven gear ②

   Wear/Damage→Replace both gears.
   Excessive noises during operation→Replace both gears.

Primary reduction ratio:		
No. of teeth		Ratio
Drive	Driven	
23	72	3.130





CLUTCH

1. Inspect:
   - Clutch housing dogs ①
   Cracks/Pitting (edges):
   Moderate→Deburr.
   Severe→Replace clutch housing.

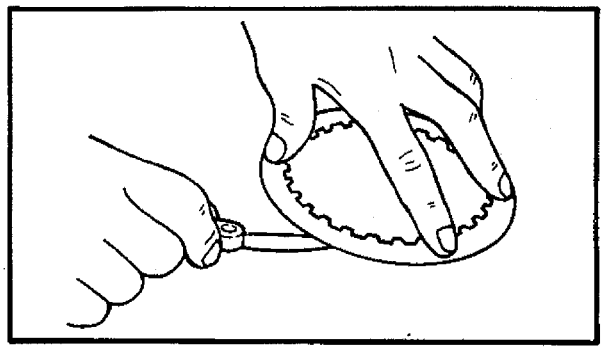
NOTE:

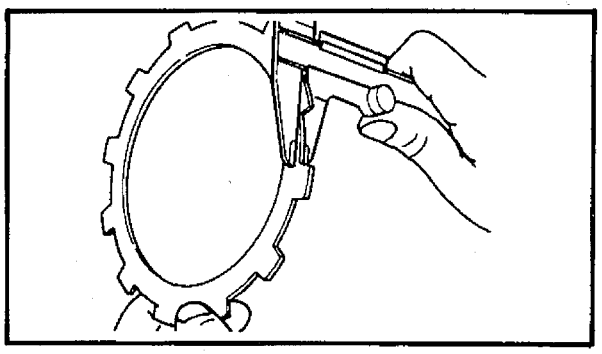
Pitting on friction plate dogs of clutch housing will cause erratic operation.

2. Inspect:
   - Clutch housing bearing
   Damage→Replace.
3. Inspect:
   - Clutch boss spline ①
   Pitting:
   Moderate→Deburr.
   Severe→Replace.

NOTE:

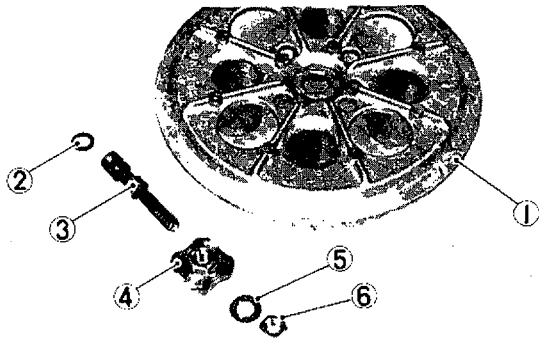
Pitting on clutch plate splines of clutch boss will cause erratic operation.





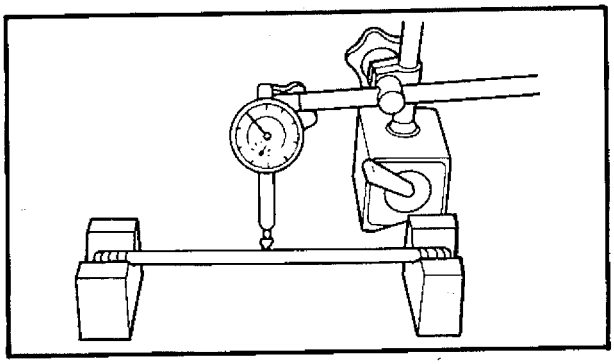
4. Measure:
   - Clutch plate warpage
   - Friction plate thickness
   Out of specification→Replace.
   Clutch or friction plate as a set.

	Standard	Wear limit
Friction Plate Thickness	2.9~3.1 mm (0.114~0.122 in)	2.5 mm (0.098 in)
Clutch Plate Warp Limit	–	0.05 mm (0.002 in)



5. Inspect:
   - Pressure plate ①
   - O-ring ②
   - Short push rod ③
   - Push plate ④
   - Plain washer ⑤
   - Locknut ⑥

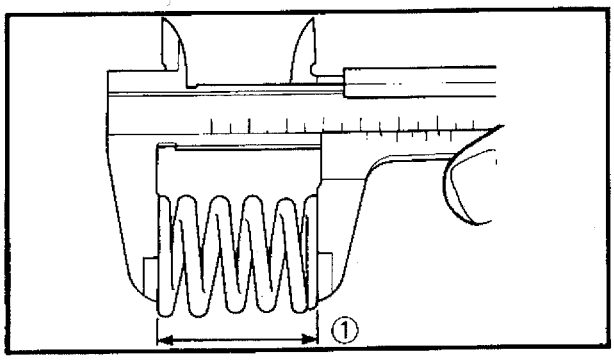
   Damage→Replace.



6. Measure:
   - Long push rod

   Roll on V-block.
   Exceeds bending limit→Replace.

Bend Limit: 0.5 mm (0.02 in)



7. Measure:
   - Clutch spring free play

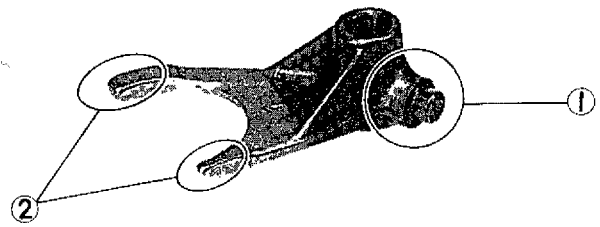
   Out of specification→Replace spring as a set.

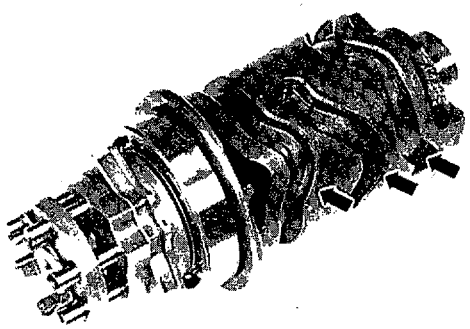
Clutch Spring Minimum Free Length ①:
43 mm (1.693 in)

TRANSMISSION

1. Inspect:
   - Shift fork cam follower ①
   - Shift fork pawl ②

   Scoring/Bends/Wear→Replace.





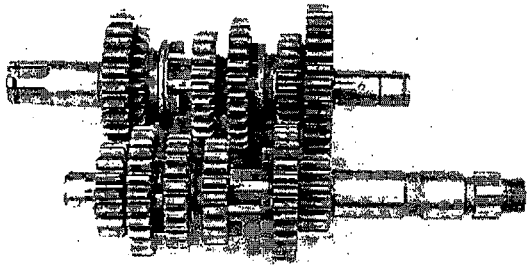
2. Inspect:
   - Shift cam groove
   - Shift cam dowel and side plate
   - Shift cam stopper plate, circlip and stopper.

   Wear/Damage→Replace.

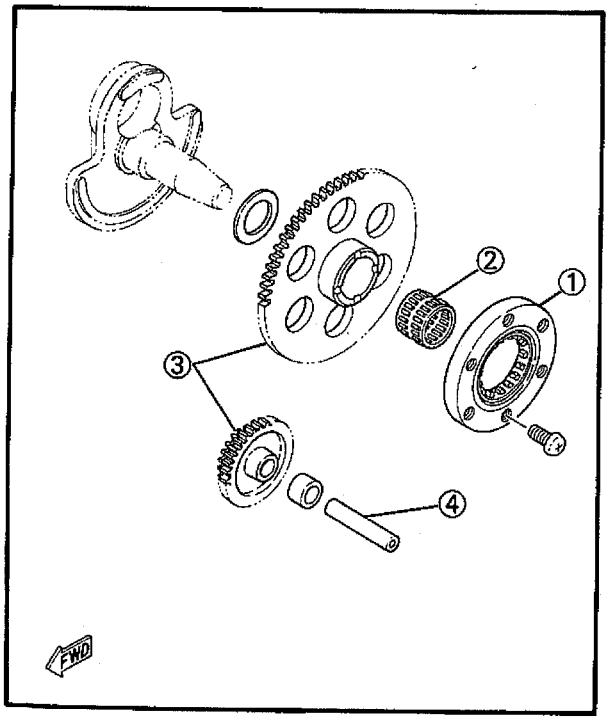
3. Check:
   • Guide bar
     Roll across a surface plate.
     Bends → Replace.
4. Measure:
   • Transmission shaft runout
     Use centering device and dial gauge.
     Out of specification → Replace bent shaft.

Maximum Runout:
0.08 mm (0.0031 in)

5. Inspect:
   • Gear teeth
     Blue discoloration/Pitting/Wear → Replace.
   • Mated dogs
     Rounded edges/Cracks/Missing portions → Replace.



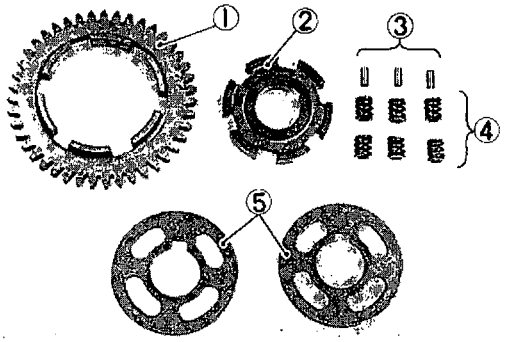
6. Check:
   • Proper gear engagement (Each gear)
     (to its counter part)
     Incorrect → Reassemble
   • Gear movement
     Roughness → Replace.



STARTER DRIVE

1. Inspect:
   • One way bearing ①
   • Bearing ②
     Pitting/Damage → Replace
2. Inspect:
   • Idler gears ③
   • Idler shaft ④
     Damage/Wear → Replace

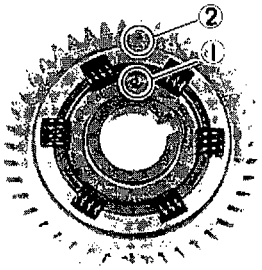
INSPECTION AND REPAIR



BALANCER DRIVE GEAR

1. Inspect:
   - Balancer drive gear ①
   - Boss ②
   - Pin ③
   - Spring ④
   - Washer ⑤

   Damage/Wear/Fatigue→Replace



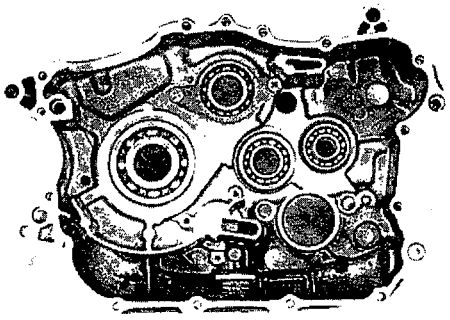
2. Align:
   - Boss match mark ①

     (with the drive gear mark ②)

CRANKCASE

1. Inspect:
   - Case halves
   - Bearing seat
   - Fitting

   Damage→Replace.



BEARINGS ADN OIL SEALS

1. Inspect:
   - Bearing

   Clean and lubricate, then rotate inner race with finger.

   Roughness→Replace bearing (see Removal).
2. Inspect:
   - Oil seals
   - Damage/Wear→Replace (see Removal).

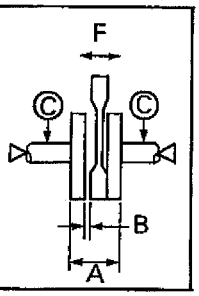
ENGINE ASSEMBLY AND ADJUSTMENT

CRANKSHAFT AND BALANCER SHAFT

① Piston ring set
② Piston
③ Piston pin clip
④ Piston pin
⑤ Bearing
⑥ Crank :Right:
⑦ Big-end bearing
⑧ Crank pin
⑨ Crank :Left:
⑩ Connecting rod
⑪ Woodruff key
⑫ Cam chain drive gear
⑬ Washer
⑭ Boss
⑮ Balancer drive gear
⑯ Balancer shaft
⑰ Straight key
⑱ Balancer driven gear

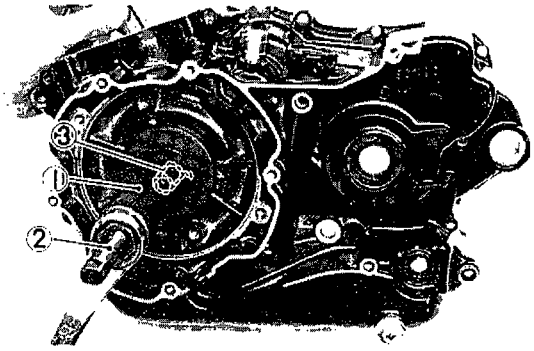
A	PISTON TO CYLINDER CLEARANCE: 0.040 ~ 0.060 mm (0.00157 ~ 0.00236 in)
B	PISTON RING END GAP (Installed): 0.20 ~ 0.35 mm (0.008 ~ 0.0014 in)

C	CRANKSHAFT RUNOUT:
A: 58.95 ~ 59.00 mm (2.321 ~ 2.323 in) C: 0.03 mm (0.0012 in) B: 0.35 ~ 0.85 mm (0.014 ~ 0.033 in) F: 0.8 mm (0.0315 in)	



CAUTION:

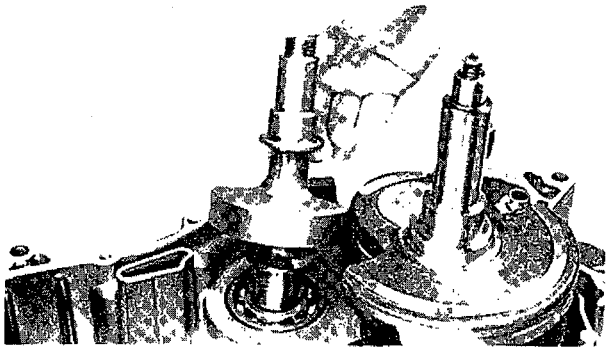
To protect the crankshaft against scratches or to facilitate the operation of the installation. Apply the grease to the oil seal lips, and apply the engine oil to each bearing.



1. Attach:
   - Crankshaft Installing Tool (90890-01274 ①, 90890-01275 ② and 90890-01383 ③)
2. Install:
   - Crankshaft

NOTE:

Hold the connecting rod at top dead center with one hand while turning the nut of the Installing Tool with the other. Operate the Installing Tool until the crankshaft bottoms against the bearing.

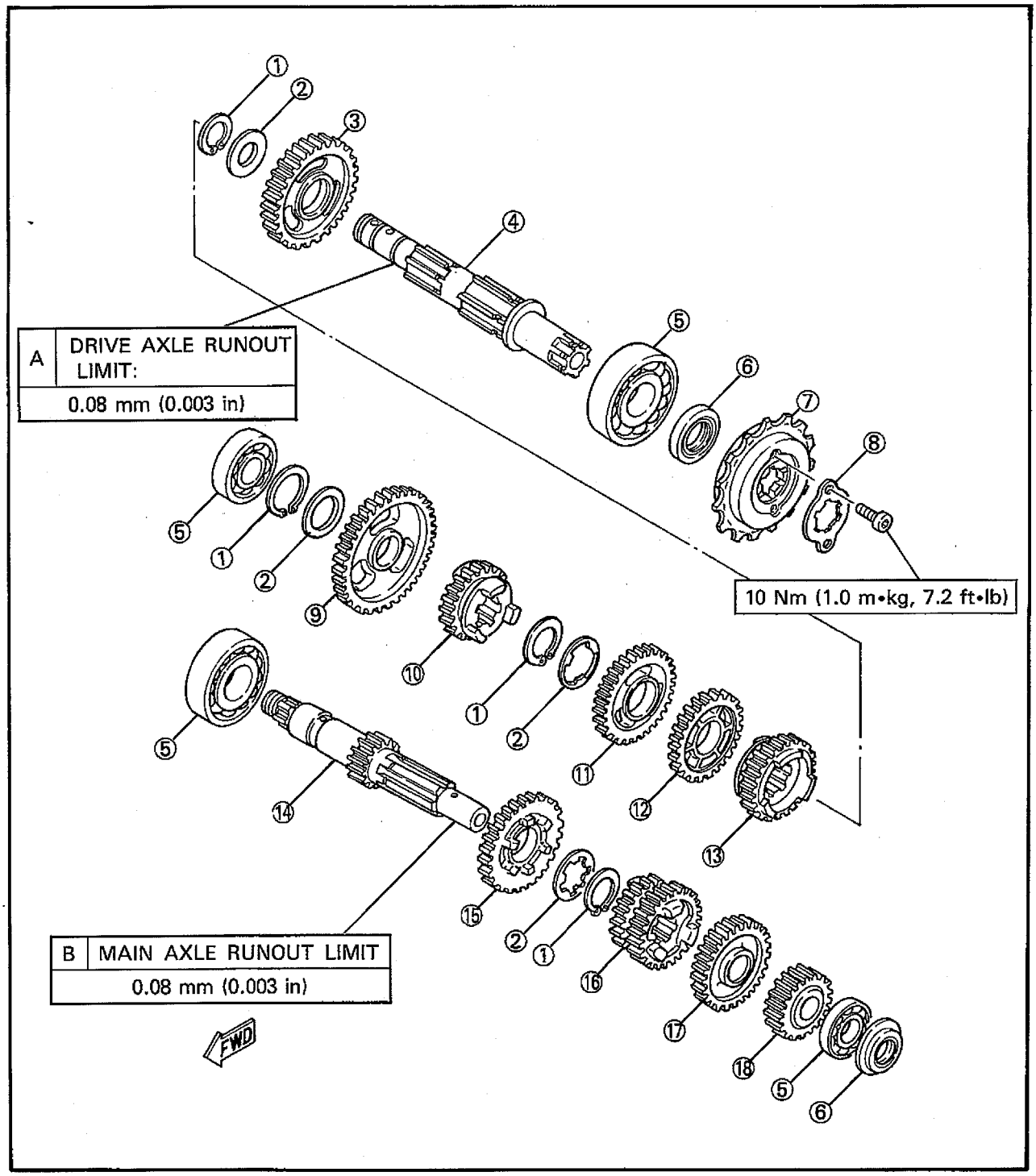


3. Install:
   - Balancer shaft

TRANSMISSION AND SHIFTER

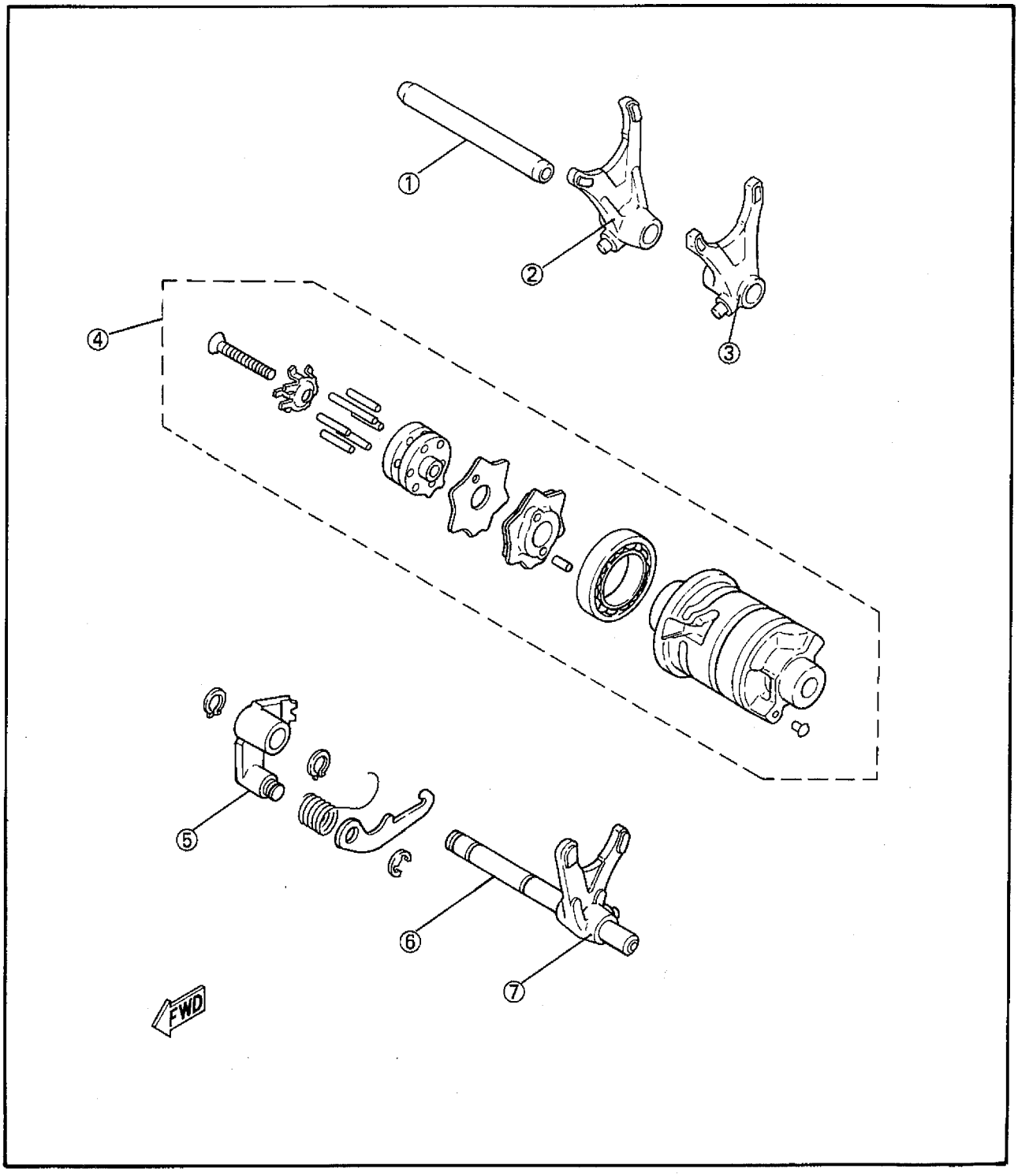
Transmission

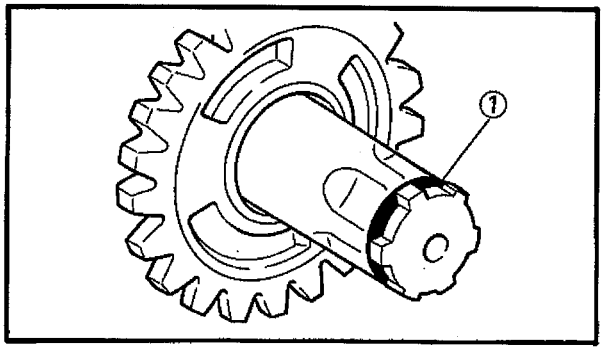
① Circlip
② Plain washer
③ 2nd wheel gear (29T)
④ Drive axle
⑤ Bearing
⑥ Oil seal
⑦ Drive sprocket
⑧ Holding plate
⑨ 1st wheel gear (37T)
⑩ 6th wheel gear (25T)
⑪ 3rd wheel gear (30T)
⑫ 4th wheel gear (27T)
⑬ 5th wheel gear (24T)
⑭ Main axle
⑮ 6th pinion gear (32T)
⑯ 3rd/4th pinion gear (22T/25T)
⑰ 5th pinion gear (27T)
⑱ 2nd pinion gear (16T)



Shifter

① Guide bar 1
② Shift fork (#3)
③ Shift fork (#1)
④ Shift cam assembly
⑤ Change lever 2
⑥ Guide bar 2
⑦ Shift fork (#2)

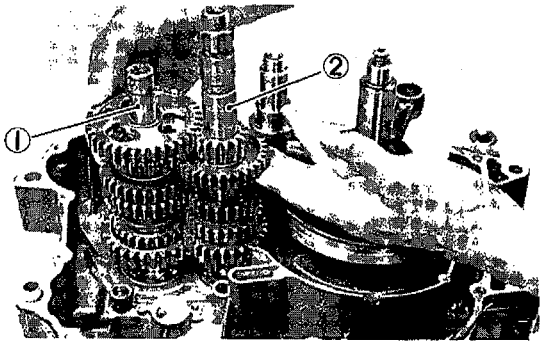




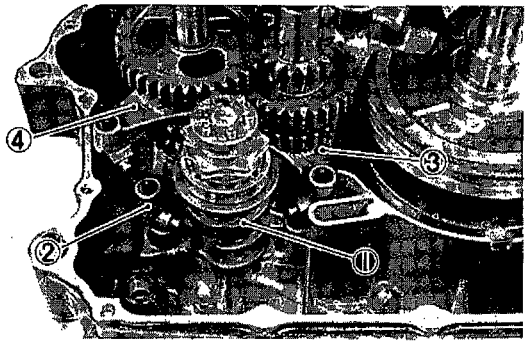
1. Install:
   - O-ring ①

NOTE:

When install the drive axle into the crankcase, pay careful attention to the crankcase oil seal lip. It is recommended to set a suitable O-ring into the drive axle groove.



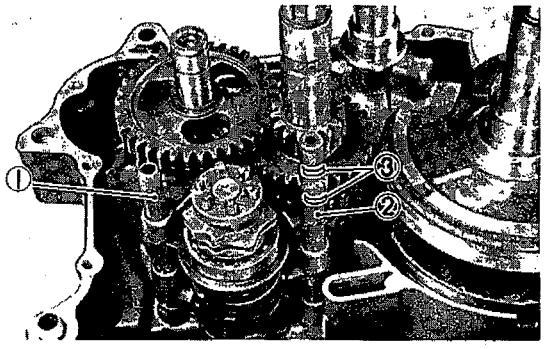
2. Install:
   - Drive axle ① and main axle ② assembly.



3. Install:
   - Shift cam assembly ①
   - Shift fork #1, ②
   - Shift fork #2, ③
   - Shift fork #3, ④

NOTE:

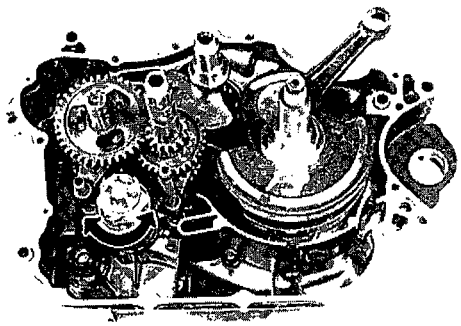
- Mesh the shift fork #1 with the 6th wheel gear and #3 with the 5th wheel gear on the drive axle.
- Mesh the shift fork #2 with the 3rd/4th pinion gear on the main axle.
- Install the shift forks with the embossed number should face downward.



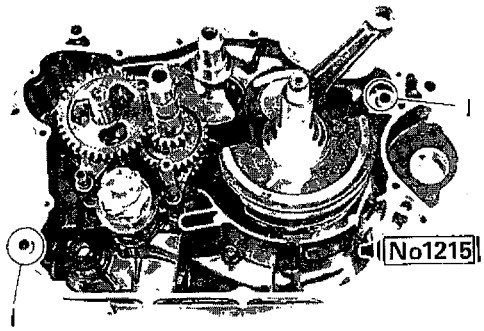
4. Install:
   - Guide bar 1 ①
   - Guide bar 2 ②

NOTE:

Install the guide bar 2 with the circlip grooves ③ should face upward.



5. Check:
   • Shifter operation
   Unsmooth operation → Repair.

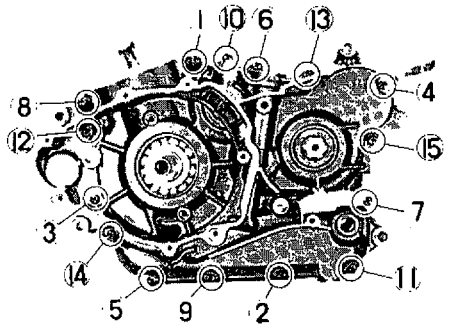


CRANKCASE

1. Install:
   • Dowels ①
2. Apply:
   • Yamaha Bond No. 1215 (90890-85505)
   (To crankcase matching surfaces.)
3. Install:
   • Right crankcase
   (onto the left crankcase)

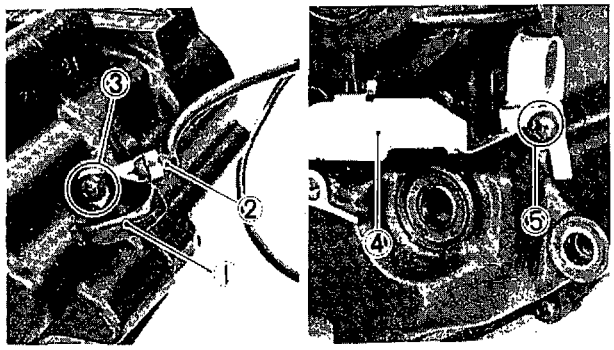
CAUTION:

Before installing and torquing the crankcase holding screws, be sure to check whether the transmission is functioning properly by manually rotating the shift cam either way.



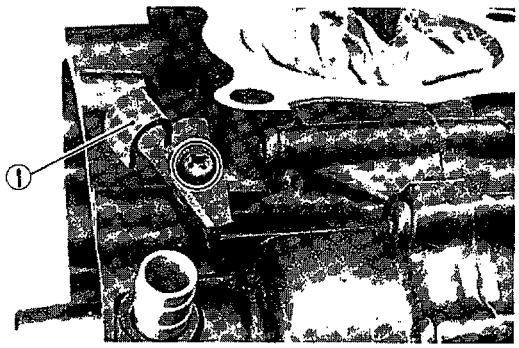
4. Tighten:
   • Crankcase holding screws
   (Follow proper sequence)

	Crankcase Holding Screws: 7 Nm (0.7 m•kg, 5.1 ft•lb)

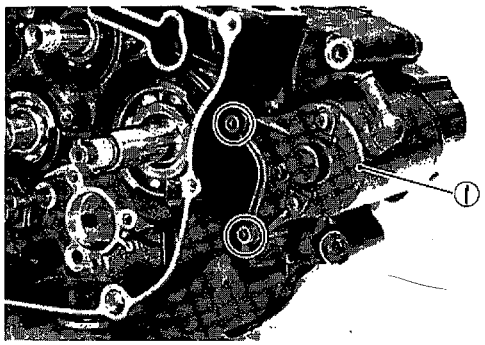


NOTE:

- Install the lead wire clamp ① and ground lead ② on screw No. 4 ③.
- Install the lead wire bracket ④ on screw No. 7 ⑤.



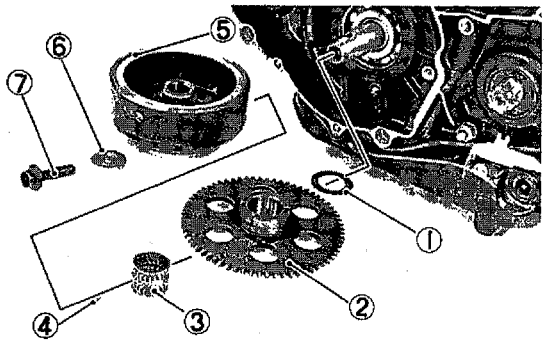
5. Install:
   - Clutch cable brakcet ①



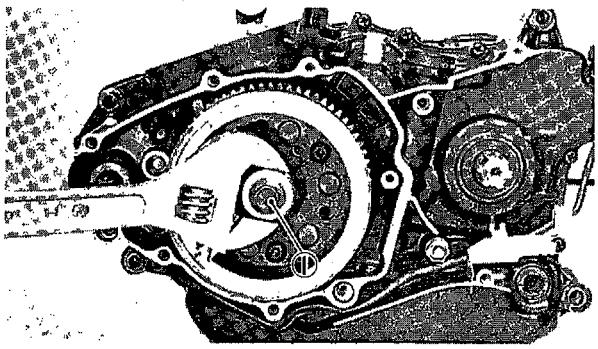
STARTER MOTOR, AC GENERATOR AND LEFT CRANKCASE COVER

1. Install:
   - Starter motor ①

	Starter Motor Securing Screw: 7 Nm (0.7 m•kg, 5.1 ft•lb)

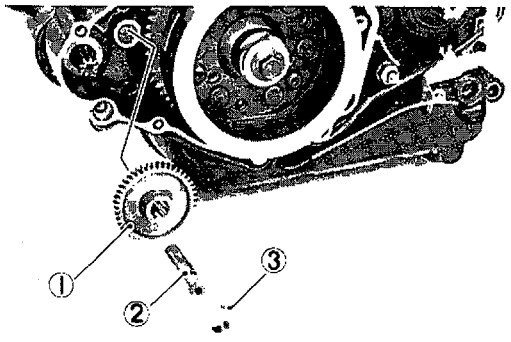


2. Install:
   - Washer ①
   - Starter driven gear ②
   - Bearing ③
   - Key ④
   - AC Generator ⑤
   - Washer ⑥
   - Bolt ⑦

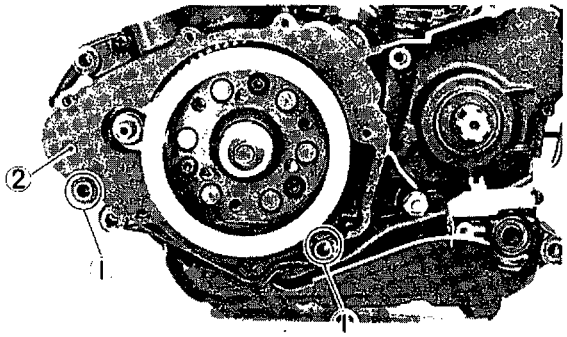


3. Tighten
   - Bolt ①

	AC Generator Securing Bolt: 60 Nm (6.0 m•kg, 43 ft•lb)

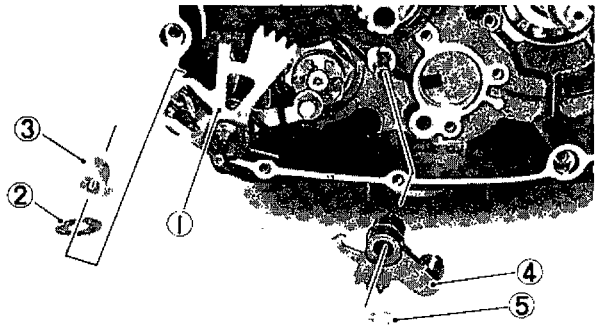


4. Install:
   - Starter idle gear ①
   - Shaft ②
   - Collar ③



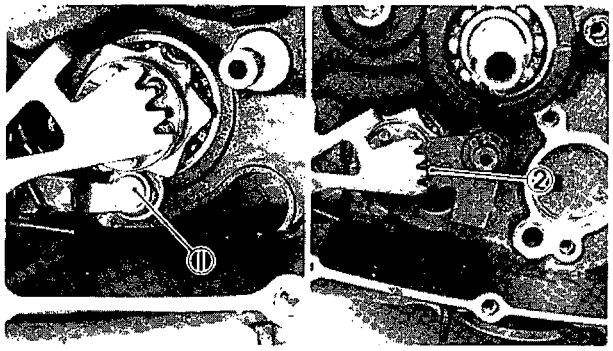
5. Install:
   - Dowels ①
   - Gasket ②
   - Left crankcase cover

Left Crankcase Cover Screw: 7 Nm (0.7 m•kg, 5.1 ft•lb)

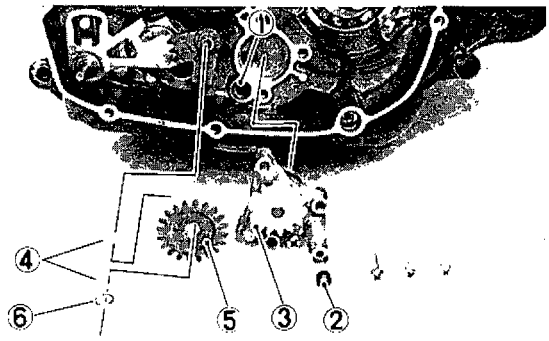


CHANGE LEVER

1. Install:
   - Change lever assembly ①
   - Washer ②
   - Spacer ③
   - Change lever 2 ④
   - Circlip ⑤



NOTE:
- Mesh the stopper lever ① with the shift cam.
- Mesh the change lever 2 mark ② with change lever pawl center.

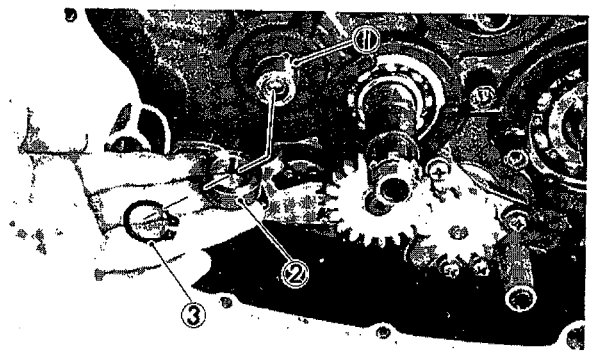


OIL PUMP AND SPACER

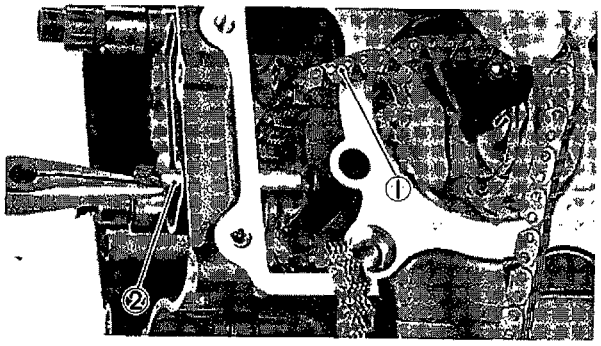
1. Install:
   - O-ring ①
   - Oil seal ②
   - Oil pump assembly ③

Oil Pump Securing Screw: 7 Nm (0.7 m•kg, 5.1 ft•lb)

   - Washer ④
   - Oil pump idle gear ⑤
   - Washer ④
   - Circlip ⑥

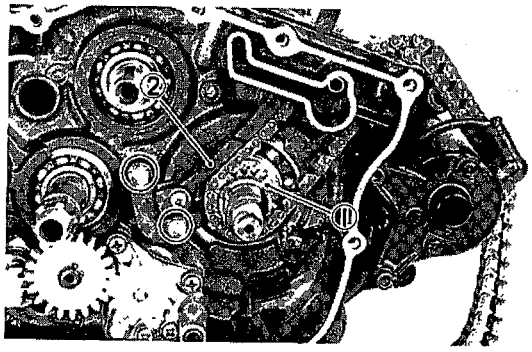


2. Install:
   - Circlip ①
   - Spacer ②
   - Circlip ③



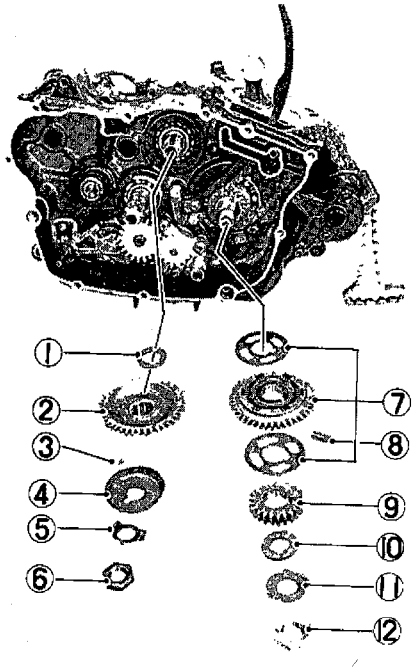
CAM CHAIN AND INTAKE SIDE CHAIN GUIDE

1. Install:
   - Cam chain ①
   - Oil pipe ②
   - Retaining wire (to the cam chain)



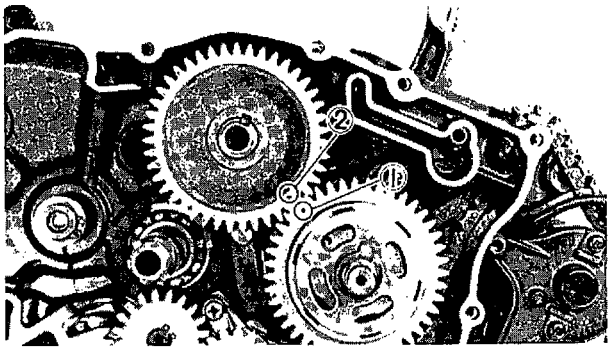
2. Install:
   - Chain drive gear ①
   - Intake side chain guide ②

	Chain Guide Bolt: 8 Nm (0.8 m•kg, 5.8 ft•lb)

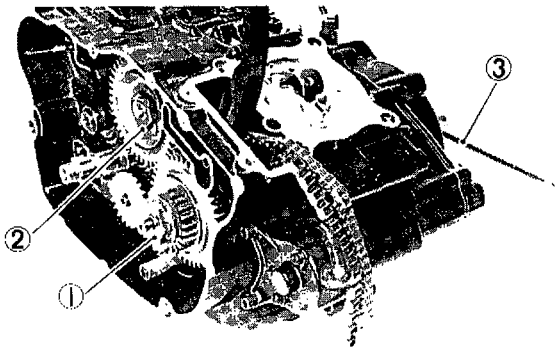


BALANCER DRIVEN GEAR AND PRIMARY DRIVE GEAR

1. Install:
   - Washer ①
   - Balancer driven gear ②
   - Key ③
   - Breather plate ④
   - Lock washer ⑤
   - Nut ⑥
   - Balancer drive gear assembly ⑦
   - Key ⑧
   - Primary drive gear ⑨
   - Washer ⑩
   - Lock washer ⑪
   - Nut ⑫

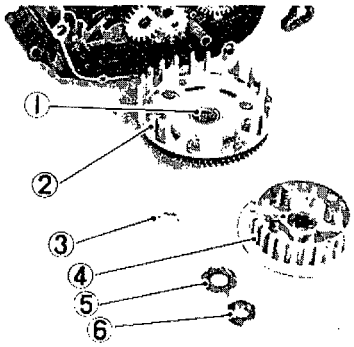


NOTE:
- Align the balancer drive gear mark ① with the balancer driven gear mark ②.



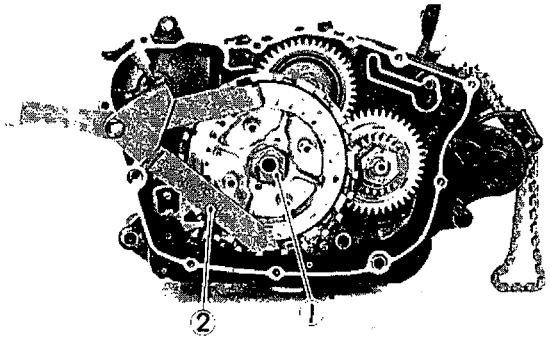
2. Tighten:
   - Primary drive gear securing nut ①
   - Balancer driven gear securing nut ②
   - Lock the crankshaft by tool ③

	Primary Drive Gear Nut: **70 Nm (7.0 m•kg, 50 ft•lb)** **Balancer Driven Gear Nut:** **60 Nm (6.0 m•kg, 43 ft•lb)**



CLUTCH

1. Install:
   - Bearing ①
   - Primary driven gear ②
   - Washer ③
   - Clutch boss ④
   - Lock washer ⑤
   - Clutch boss securing nut ⑥



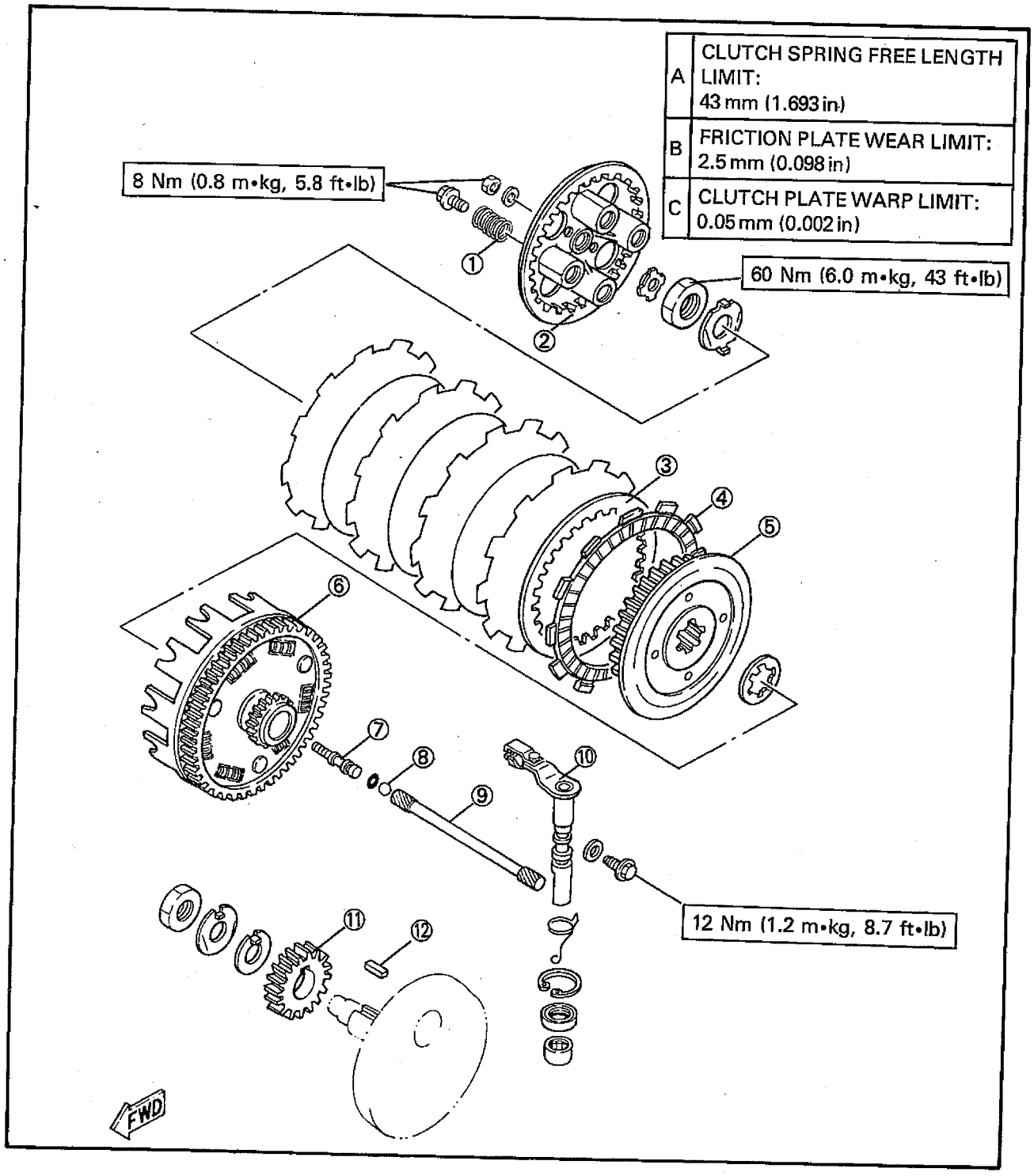
2. Tighten:
   - Clutch boss securing nut ①

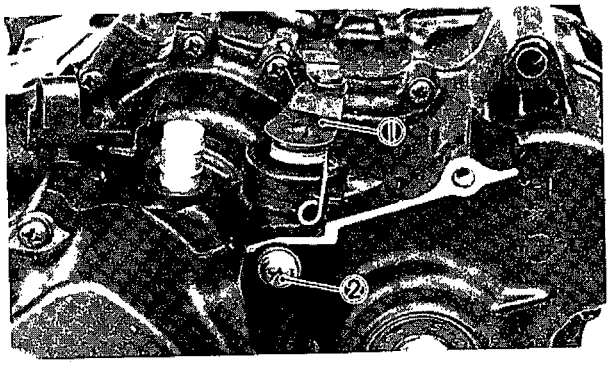
   Use Universal Clutch Holder (90890-04086)

	Clutch Boss Nut: **60 Nm (6.0 m•kg, 43 ft•lb)**

CLUTCH

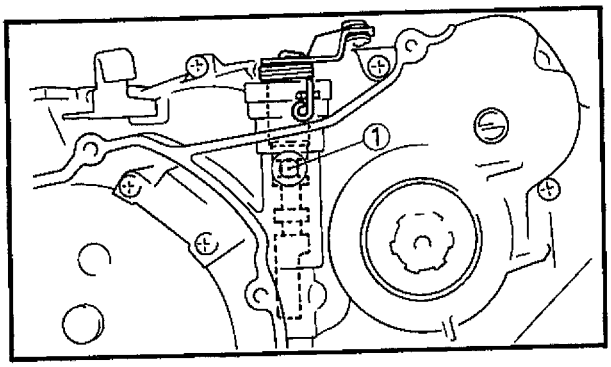
① Clutch spring
② Pressure plate
③ Clutch plate
④ Friction plate
⑤ Clutch boss
⑥ Primary driven gear
⑦ Push rod #1
⑧ Push rod ball
⑨ Push rod #2
⑩ Push lever axle
⑪ Primary drive gear
⑫ Key



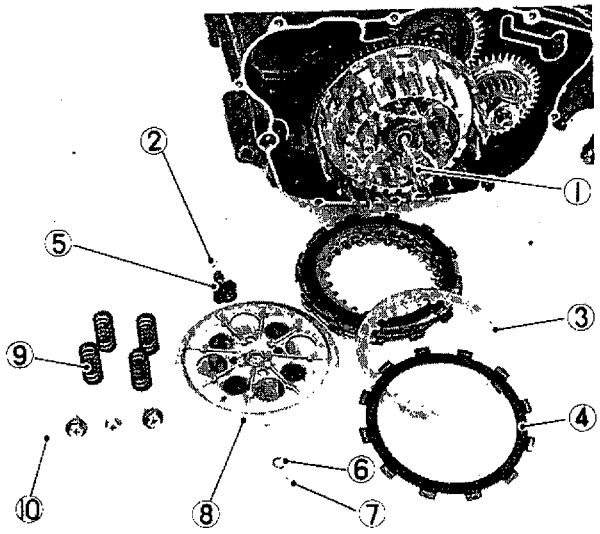


3. Install:
   - Push lever axle assembly ①
   - Screw ②

Push Lever Axle Screw: 12 Nm (1.2 m•kg, 8.7 ft•lb)

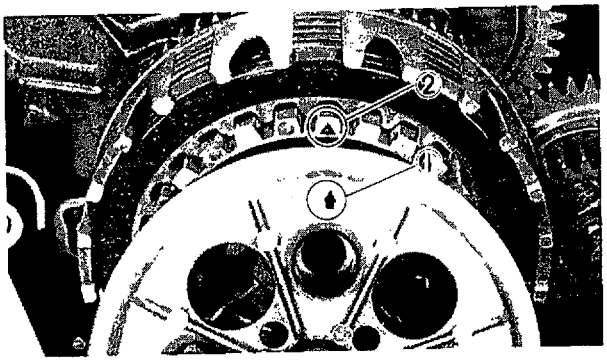


NOTE:
The push lever axle screw should lock the top groove ① of the push lever axle.

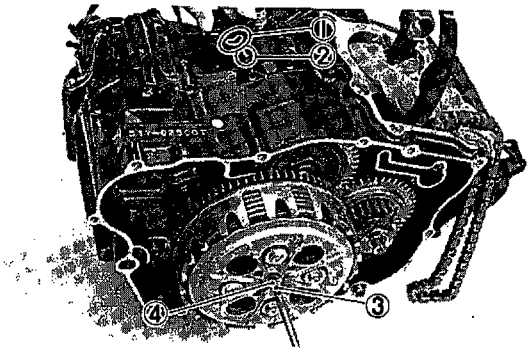


4. Install:
   - Push rod #2 ①
   - Push rod ball ②
   - Clutch plates ③
   - Friction plates ④
   - Push rod #1 ⑤
   - Washer ⑥
   - Nut ⑦
   - Pressure plate ⑧
   - Clutch springs ⑨
   - Clutch spring holding screws ⑩

Clutch Spring Screw: 8 Nm (0.8 m•kg, 5.8 ft•lb)



NOTE:
Align the pressure plate arrow mark ① with the clutch boss mark ②.

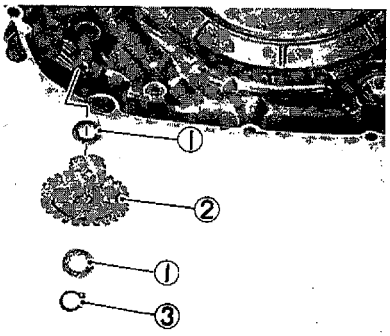


5. Turn:
   - Push lever
   (To align the push lever pointer ① with the crankcase embossed mark ②)
6. Turn:
   - Push rod #1
   (in or out until it lightly seats against a push rod ball)

③ Push rod #1
④ Locknut

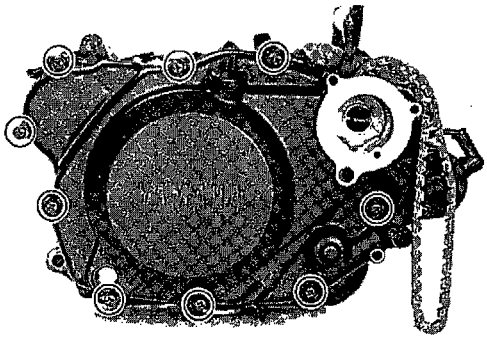
7. Tighten:
   - Locknut

Push Rod Locknut:
8 Nm (0.8 m•kg, 5.8 ft•lb)



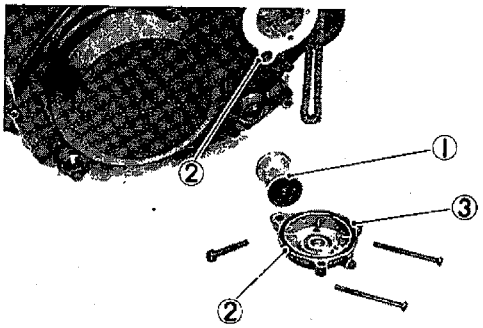
RIGHT CRANKCASE COVER

1. Install:
   - Washer ①
   - Tachometer driven gear ②
   - Circlip ③



2. Install:
   - Dowels
   - Gasket
   - Right crankcase cover

Right Crankcase Cover Screw:
7 Nm (0.7 m•kg, 5.1 ft•lb)



OIL FILTER

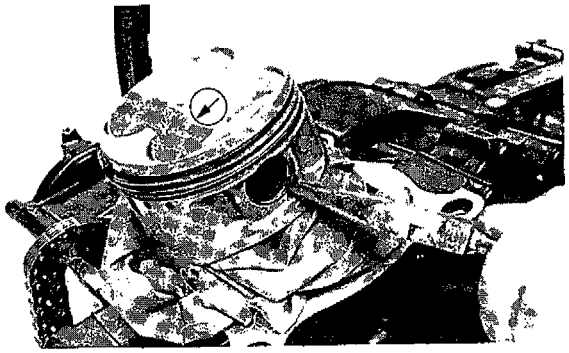
1. Install:
   - Oil filter ①
   - O-ring ②
   - Oil filter cover ③

Oil Filter Cover Screw:
7 Nm (0.7 m•kg, 5.1 ft•lb)

PISTON

1. Apply:
   - Engine oil

   To the piston pin, bearing, piston ring grooves and piston skirt areas.



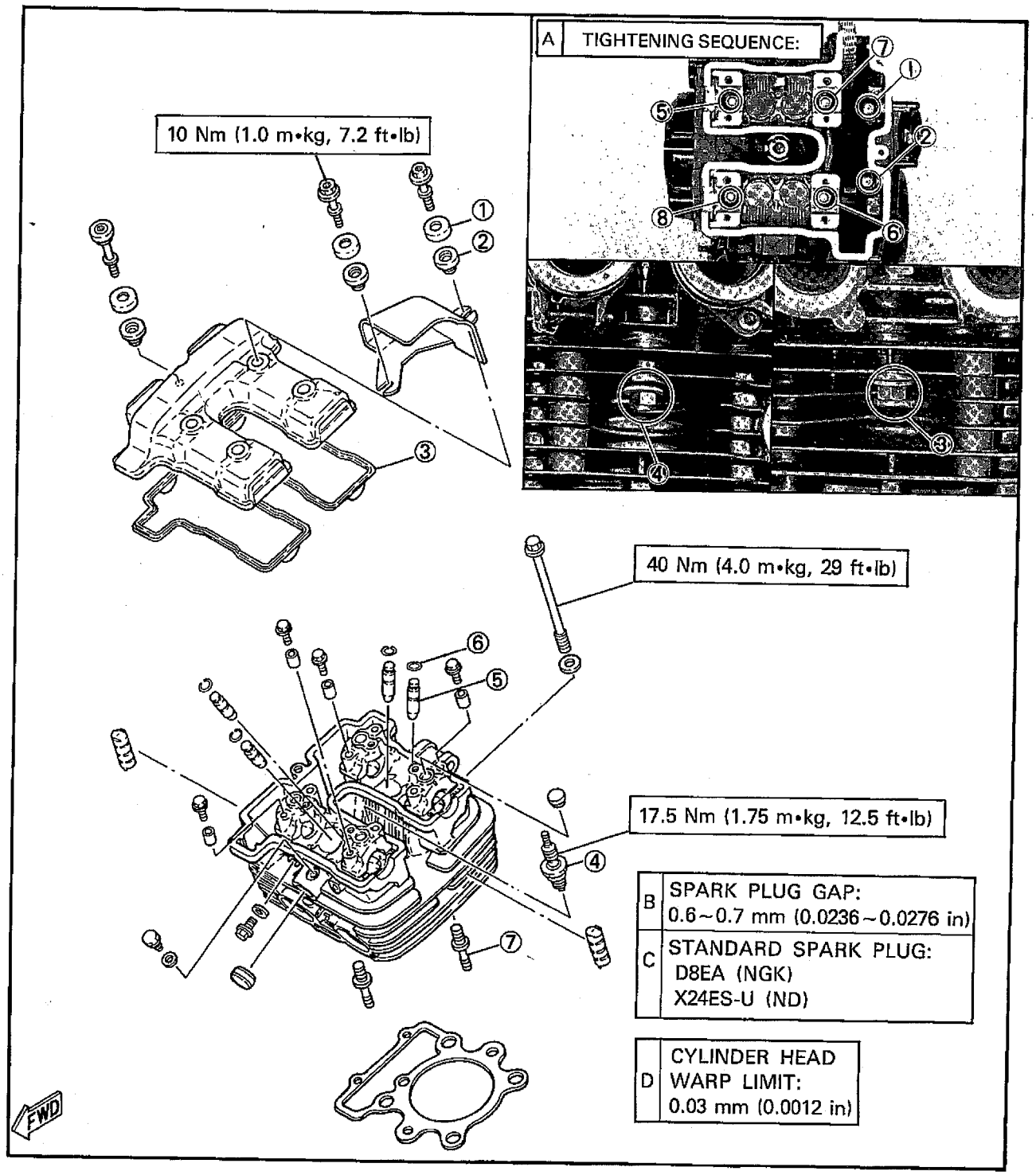
2. Install:
   - Piston
   - Piston pin
   - Pison pin clip

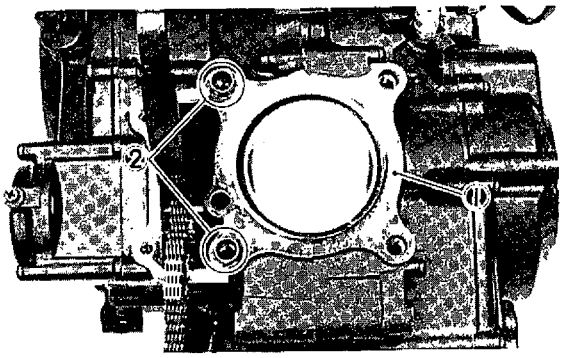
NOTE:

- The arrow on the piston must point to the front of the engine.
- 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.
- Always use a new piston pin clip.

CYLINDER, CYLINDER HEAD AND CAMSHAFT

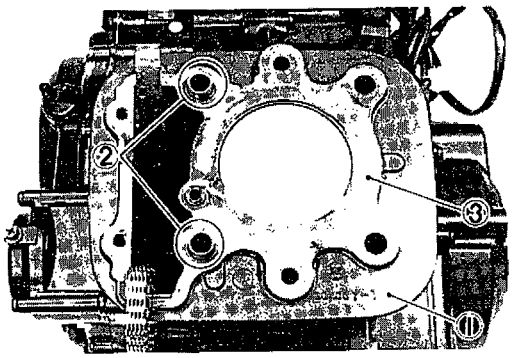
① Washer
② Rubber washer
③ Gasket
④ Spark plug
⑤ Valve guide
⑥ Circlip
⑦ Stud bolt



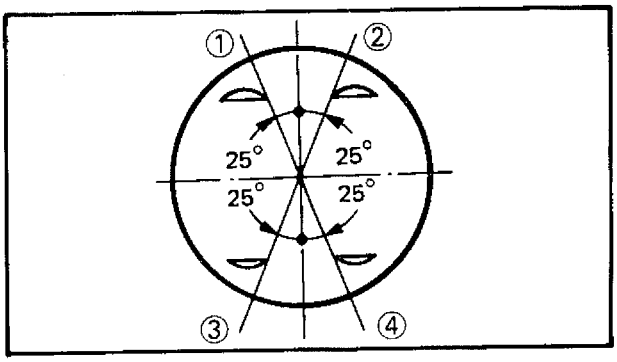


CYLINDER AND CYLINDER HEAD

1. Install:
   - Cylinder gasket ①
   - Dowels ②



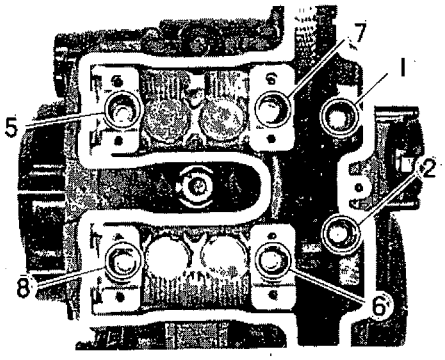
2. Install:
   - Cylinder ①
   - Dowels ②
   - Cylinder head gasket ③



NOTE:

Set the piston ring ends to the positions as shown.

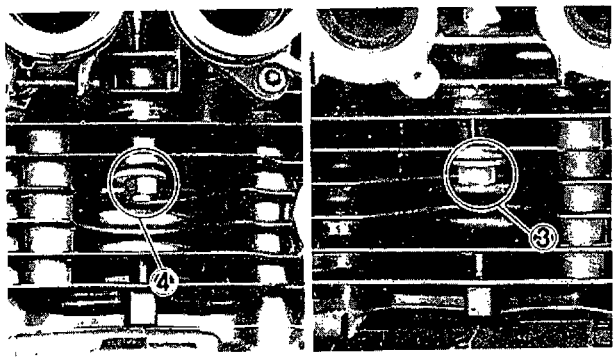
① Top ring end
② Oil ring end (lower rail)
③ Oil ring end (upper rail)
④ 2nd ring end



3. Install:
   - Cylinder head

NOTE:

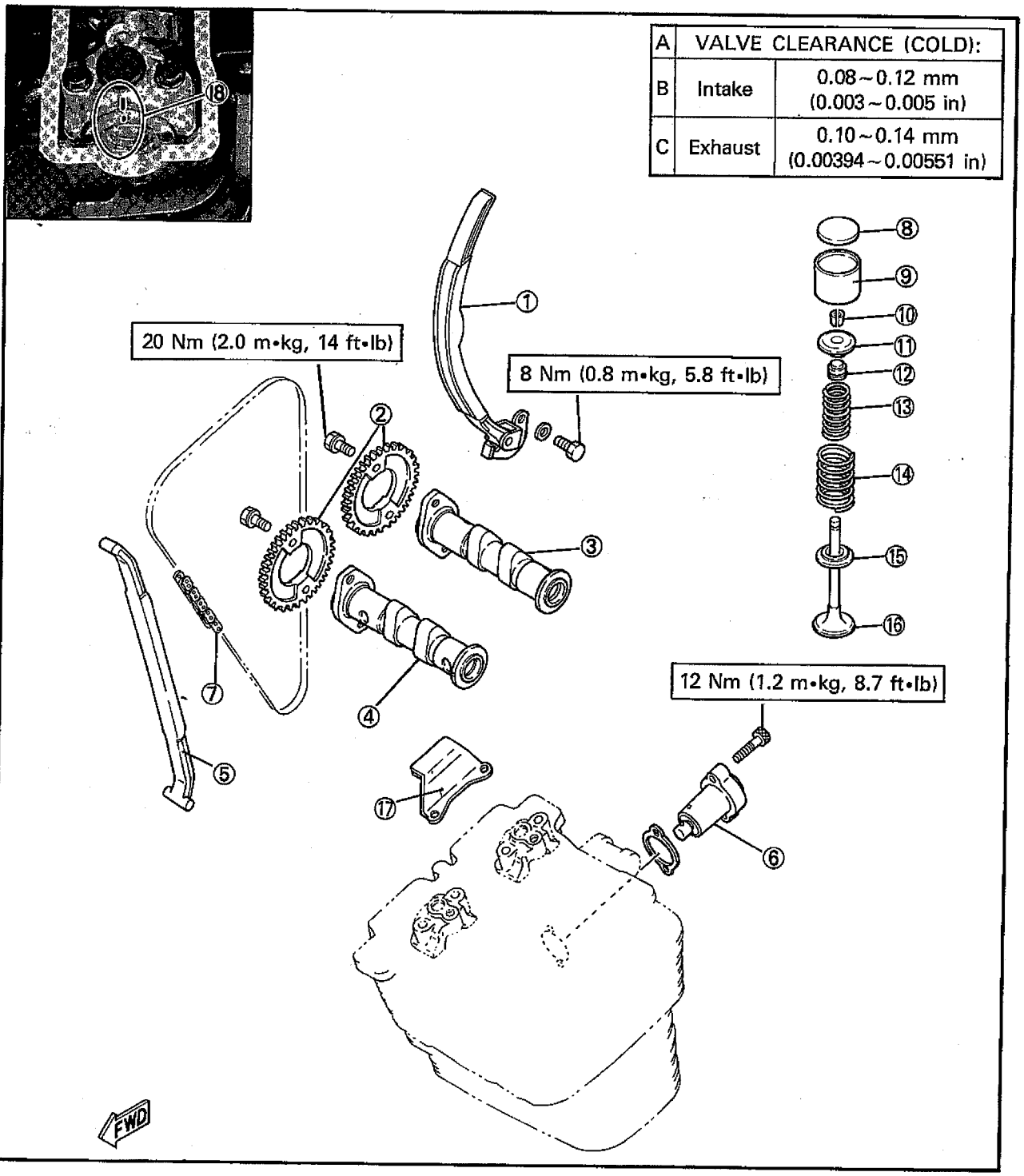
Tighten the bolts and nuts in their proper tightening sequence.

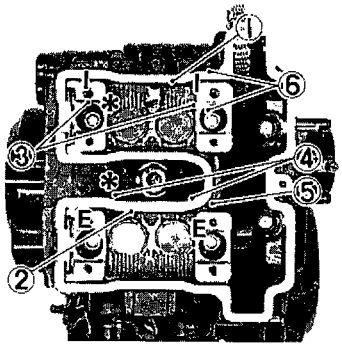


Cylinder Head Bolt (10 mm):
40 Nm (4.0 m•kg, 29 ft•lb)
Cylinder Head Bolt (6 mm)
10 Nm (1.0 m•kg, 7.2 ft•lb)
Cylinder Head Nut
20 Nm (2.0 m•kg, 14 ft•lb)

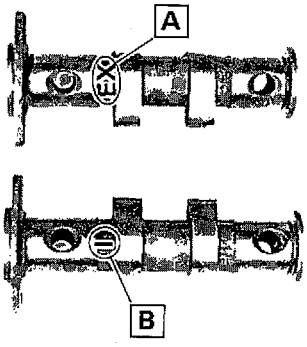
CAMSHAFT

① Intake side chain guide
② Cam sprocket
③ Camshaft (Intake)
④ Camshaft (Exhaust)
⑤ Exhaust side chain guide
⑥ Chain tensioner body
⑦ Cam chain
⑧ Adjusting pad
⑨ Valve lifter
⑩ Valve retainer
⑪ Spring seat
⑫ Oil seal
⑬ Inner spring
⑭ Outer spring
⑮ Spring seat
⑯ Valve
⑰ Upper chain guide
⑱ Match mark

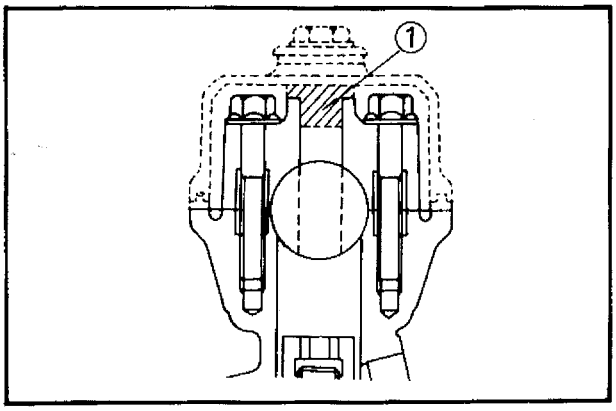




1. Install:
   - Intake camshaft ①
   - Exhaust camshaft ②
   - Intake cam caps ③
   - Exhaust cam caps ④
   - Oil plugs ⑤
   - Bolts ⑥



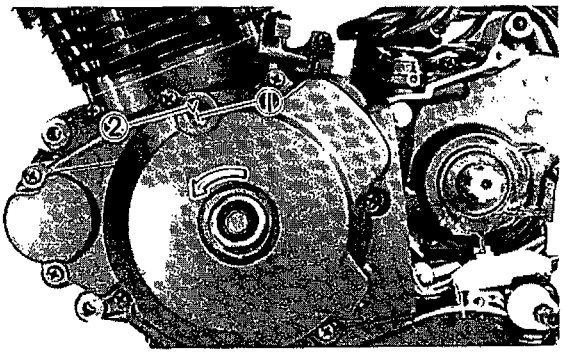
NOTE:
- "I" mark [B] for intake camshaft
- "EX" mark [A] for exhaust camshaft
- Make sure the timing mark on the camshaft faces upward.
- Apply engine oil to camshaft bearing surfaces before installing camshafts.
- Do not install the bolts at ✳ marked places in this stoge.



CAUTION:
The oil plugs ① must be installed in each camshaft hole to ensure that an adequate supply of oil will be distributed along the camshafts.

2. Tighten:
   - Cap bolts

	Cap bolts: **10 Nm (1.0 m•kg, 7.2 ft•lb)**



Cam Chain

1. Rotate:
   - Crankshaft
     Counter clockwise.
2. Align:
   - "I" mark ①
     On the AC Generater rotor with the stationary pointer ② when piston is at TDC on compression stroke.

3. Rotate:
   • Exhaust camshaft
4. Align:
   • Exhaust camshaft timing mark
     (with the left side exhaust cam cap mark)

CAUTION:

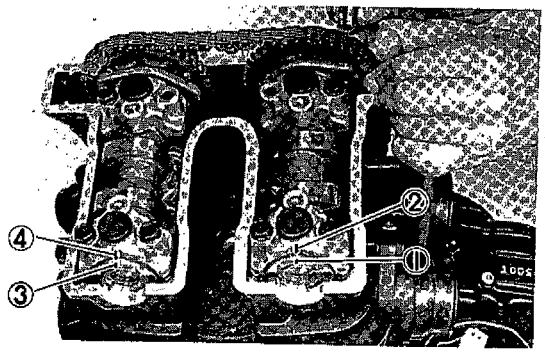
Do not rotate the camshaft over 1/2 turn or damage to the piston and valve will result.

5. Position:
   • Cam chain
     (onto sprockets)
6. Install:
   • Sprockets
     (onto exhaust camshafts)
7. Force the exhaust sprocket clockwise (viewing from left side engine) to remove all cam chain slack.
8. Align:
   • Sprocket, hole
     (with the exhaust camshaft thread hole)

NOTE:

If the sprocket hole do not align with the camshaft hole, adjust chain links between crankshaft and exhaust camshaft.

9. Install:
   • Exhaust sprocket bolt
     (temporarily tighten)
10. Rotate:
    • Intake camshaft
11. Align:
    • Intake camshaft timing mark ①
      (with the left side intake cam cap mark ②)



③ Exhaust camshaft timing mark
④ Left side exhaust cam cap mark

CAUTION:

Do not rotate the camshaft over 1/2 turn or damage to the piston and valve will result.

12. Force the intake sprocket clockwise (viewing from left side engine) to remove all cam chain slack.

13. Align:
    •Intake sprocket hole
    (with the intake camshaft thread hole)

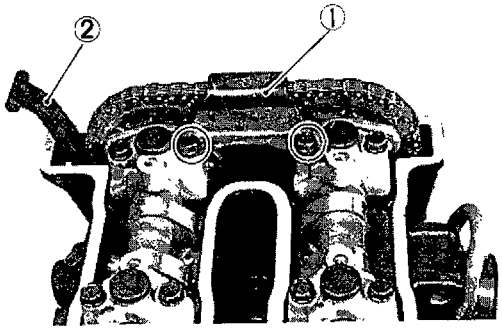
NOTE:

If the sprocket hole do not align with the camshaft thread hole, adjust chain links between exhaust and intake camshafts.

14. Install:
    •Intake sprocket bolt
    (temporarily tighten)

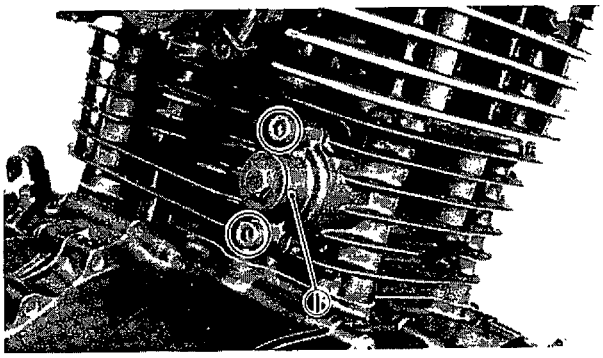
NOTE:

- Be sure the camshaft timing marks align with the cam cap arrow mark.
- Be sure the "I" mark on the rotor align with the stationary pointer.



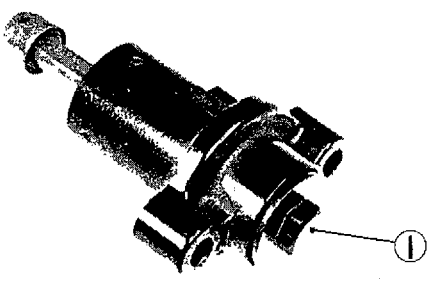
15. Install:
    •Exhaust side chain guide ②
    •Upper chain guide ①

	Upper Chain Guide Bolt: **10 Nm (1.0 m•kg, 7.2 ft•lb)**

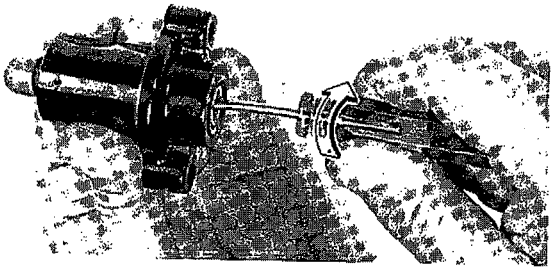


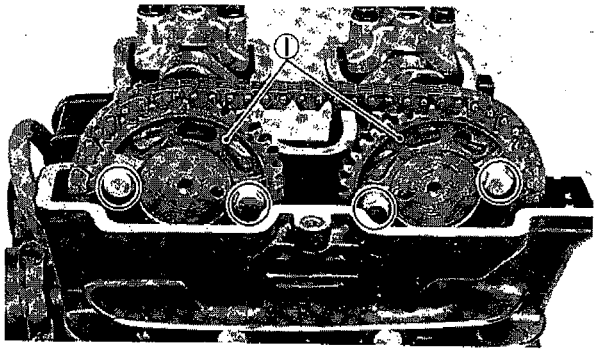
16. Install:
    •Tensioner assembly ①

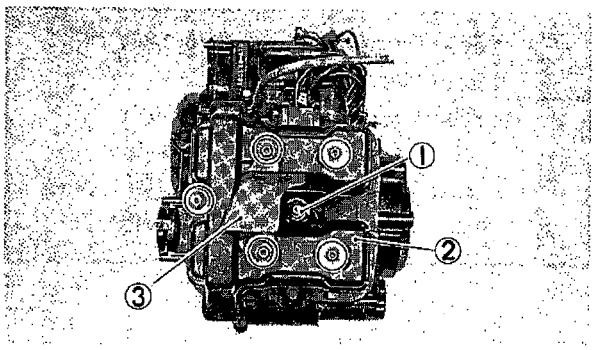
	Tensioner Screw: **12 Nm (1.2 m•kg, 5.8 ft•lb)**



Cam Chain Tensioner Installation Steps:
- Remove the blind bolt ① from the tensioner body.
- Insert the small screw driver into the blind bolt hole.
- Turn the screw driver clockwise until it stops completely; then, keep the screw driver at this position.







•Install the tensioner with a new gasket onto the cylinder. Torque the bolts to specification.

Tensioner Body:
12 Nm (1.2 m•kg, 8.7 ft•lb)
Blind Bolt:
6 Nm (0.6 m•kg, 4.3 ft•lb)

•Release the tension rod by pulling out the screw driver.

17. Rotate:
    •Crankshaft
    Counterclockwise
18. Install:
    •Sprocket bolts ① (all)

Sprocket Bolts:
20 Nm (2.0 m•kg, 14 ft•lb)

19. Install:
    •Left crankcase cover plug
    •Timing plug
    •Spark plug ①

Spark Plug:
17.5 Nm (1.75 m•kg, 12.5 ft•lb)

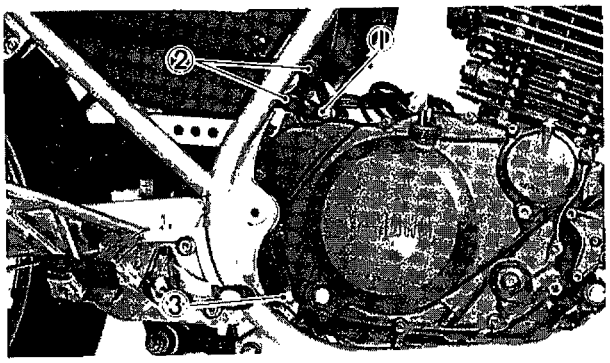
•Cylinder head cover gasket
•Cylinder head cover ②

Cylinder Head Cover Bolt
10 Nm (1.0 m•kg, 7.2 ft•lb)

•Air baffle plate ③

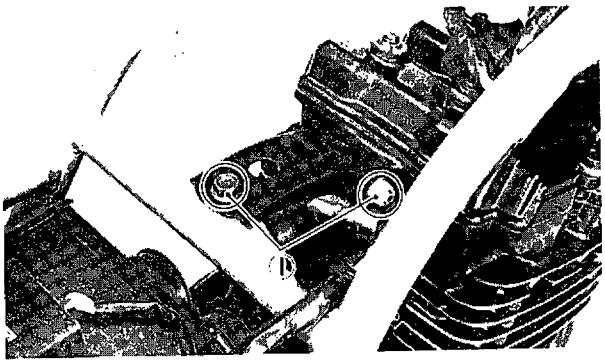
REMOUNTING ENGINE

1. Reverse engine removal steps. Pay close attention to installation of following steps.

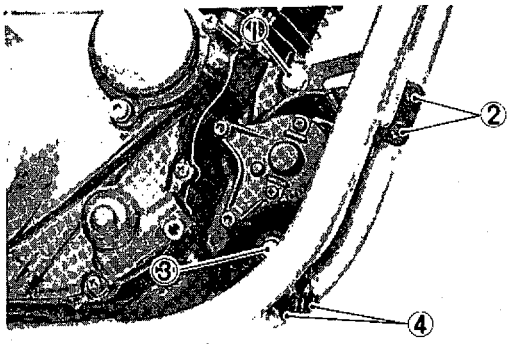


2. Tighten:
   • Engine mounting bolts.

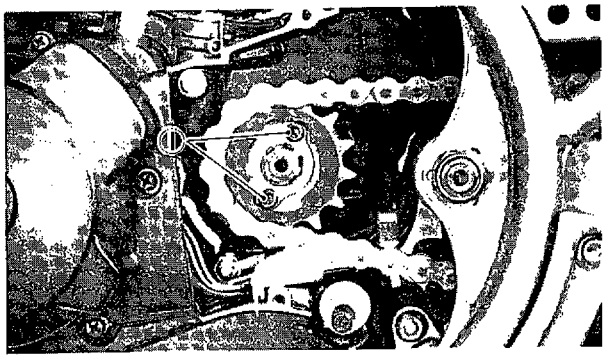
Rear upper mounting bolt ①
Bracket bolts ②
Rear lower mounting bolt ③
33 Nm (3.3 m•kg, 24 ft•lb)



Upper mounting bolts ①
33 Nm (3.3 m•kg, 24 ft•lb)

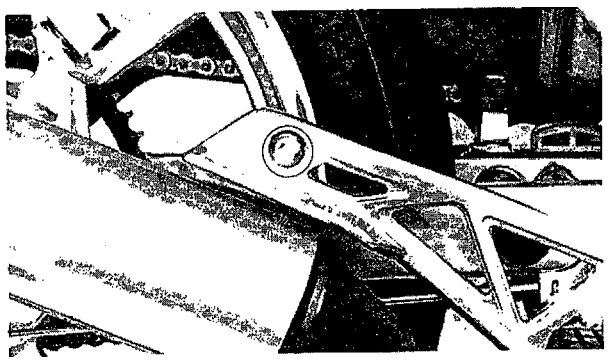


Front upper mounting bolt ①
Bracket bolts ②
Front lower mounting bolt ③
33 Nm (3.3 m•kg, 24 ft•lb)
Bracket bolts ④
20 Nm (2.0 m•kg, 14 ft•lb)



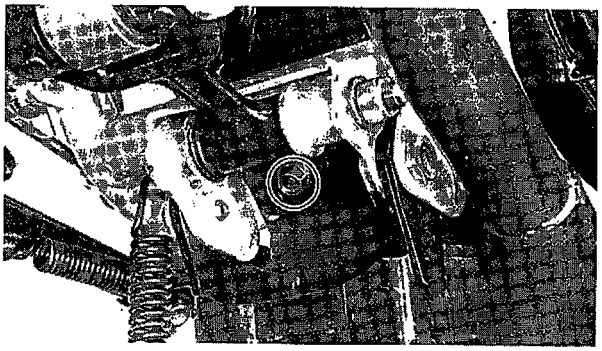
3. Tighten:

Drive Chain Sprocket Bolt ①:
10 Nm (1.0 m•kg, 7.2 ft•lb)

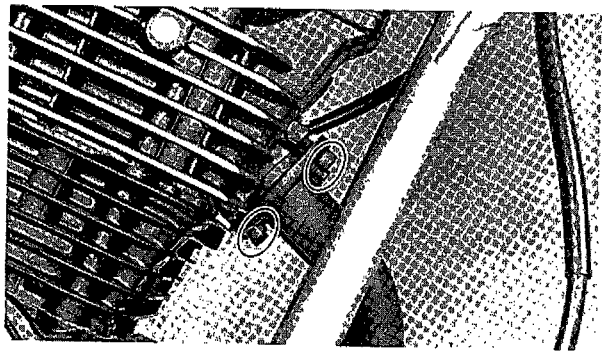


4. Tighten:
   • Exhaust pipe and muffler

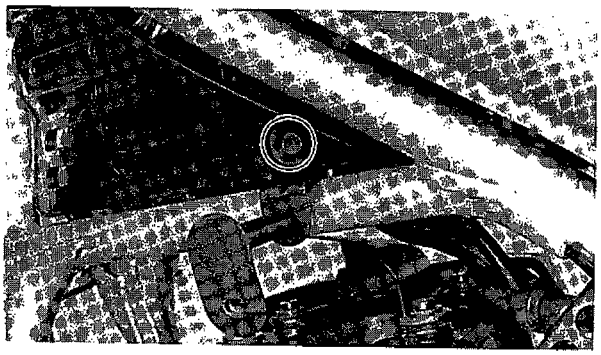
Muffler Bracket Bolt:
30 Nm (3.0 m•kg, 22 ft•lb)



Muffler Chamber Bolt:
15 Nm (1.5 m•kg, 11 ft•lb)



Exhaust Pipe Flange Bolt:
12 Nm (1.2 m•kg, 8.7 ft•lb)



5. Tighten:
   Cowling stay

Cowling Stay Bolt:
23 Nm (2.3 m•kg, 17 ft•lb)

6. Adjust:
   • Drive chain deflection

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

7. Tighten:

Rear Axle Nut:
107 Nm (10.7 m•kg, 79 ft•lb)

8. Fill:
   • Crankcase

Engine Oil:
1.8 L (1.58 Imp qt, 1.9 US qt)

CHAPTER 4.
CARBURETION

CARBURETOR 4-1
SECTION VIEW 4-2
DISASSEMBLY 4-3
INSPECTION 4-4
ASSEMBLY 4-5
FUEL LEVEL ADJUSTMENT 4-6
FULL THROTTLE ADJUSTMENT 4-7
CARBURETOR SYNCHRONIZATION 4-7

AIR CLEANER AND CRANKCASE VENTILATIONS SYSTEM 4-8

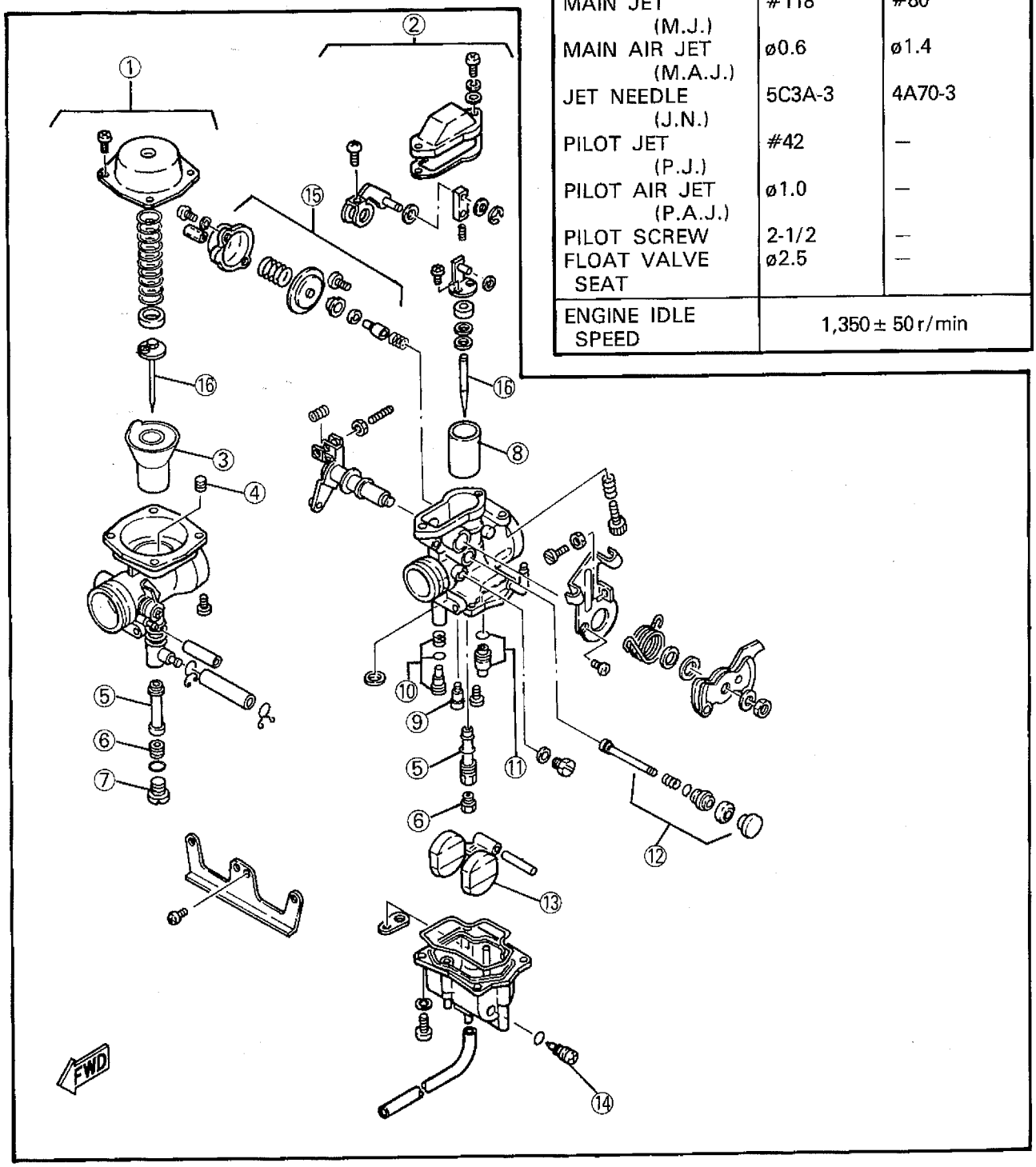
CARBURETION

CARBURETOR

① Secondary carburetor
② Primary carburetor
③ Vacuum piston
④ Main air jet
⑤ Main nozzle
⑥ Main jet
⑦ Blind plug
⑧ Piston valve
⑨ Pilot jet
⑩ Pilot screw
⑪ Valve seat assembly
⑫ Starter plunger assembly
⑬ Float
⑭ Drain screw
⑮ Coasting enricher assembly
⑯ Jet needle

Specifications

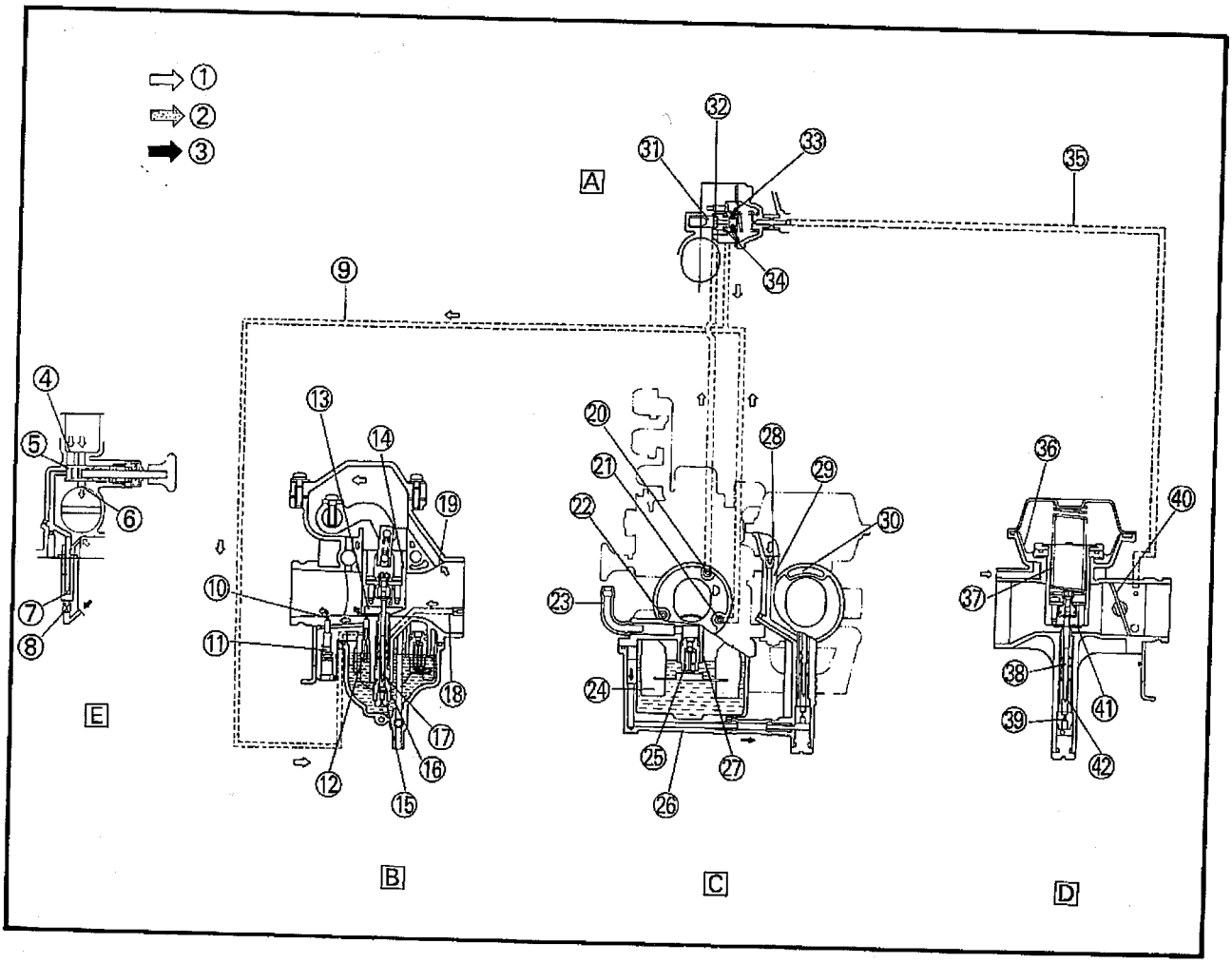
	PRIMARY CARB	SECONDARY CARB
MAIN JET (M.J.)	#118	#80
MAIN AIR JET (M.A.J.)	ø0.6	ø1.4
JET NEEDLE (J.N.)	5C3A-3	4A70-3
PILOT JET (P.J.)	#42	—
PILOT AIR JET (P.A.J.)	ø1.0	—
PILOT SCREW	2-1/2	—
FLOAT VALVE SEAT	ø2.5	—
ENGINE IDLE SPEED	1,350 ± 50 r/min	



SECTION VIEW

① Air
② Fuel
③ Mixture
④ Air inlet
⑤ Starter valve
⑥ Mixture outlet
⑦ Starter jet #1
⑧ Starter jet #2
⑨ Pilot air circuit
⑩ Pilot outlet
⑪ Pilot screw
⑫ Pilot jet
⑬ Bypass hole
⑭ Throttle valve
⑮ Main air jet
⑯ Main nozzle
⑰ Jet needle
⑱ Primary main air circuit
⑲ Air inlet for startrer
⑳ Enricher air jet
㉑ Pilot air jet
㉒ Main air jet
㉓ Fuel joint
㉔ Float
㉕ Needle valve
㉖ Secondary fuel circuit
㉗ Valve seat
㉘ Main air jet
㉙ Secondary main air circuit
㉚ Air inlet
㉛ Rod
㉜ Valve
㉝ Diaphragm assembly
㉞ Valve seat
㉟ Vacuum circuit
㊱ Diaphragm
㊲ Vacuum piston
㊳ Main nozzle
㊴ Main jet
㊵ Throttle valve
㊶ Vacuum hole
㊷ Jet needle

Ⓐ COASTING ENRICHER SYSTEM
Ⓑ PRIMARY SYSTEM
Ⓒ FUEL SYSTEM
Ⓓ SECONDARY SYSTEM
Ⓔ STARTER SYSTEM

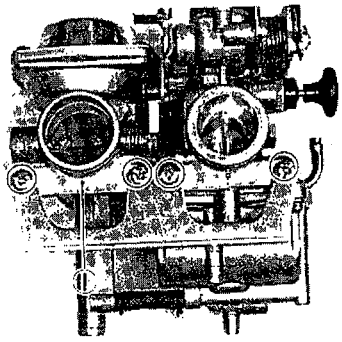


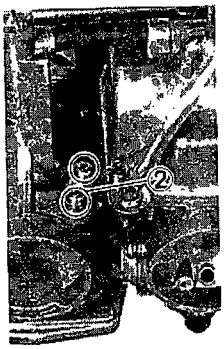
DISASSEMBLY

NOTE:

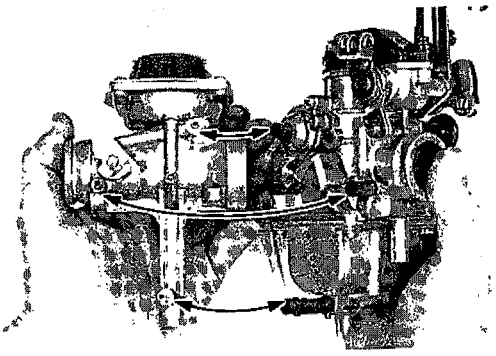
The following parts can be cleaned and inspected without carburetor separation.

- Piston valve
- Vacuum piston
- Starter plunger
- Float chamber components
- Coasting enricher



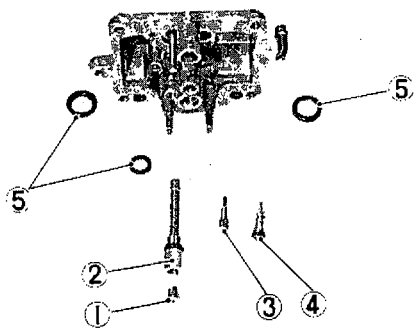


1. Remove:
   - Front bracket ①
   - Rear bracket ②

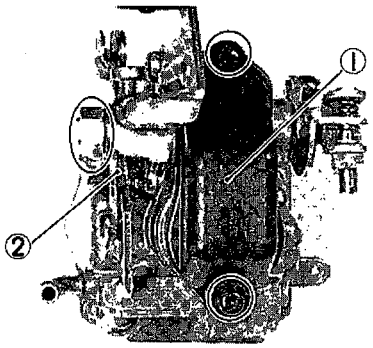


2. Disconnect:
   - Primary carburetor
   - Secondary carburetor

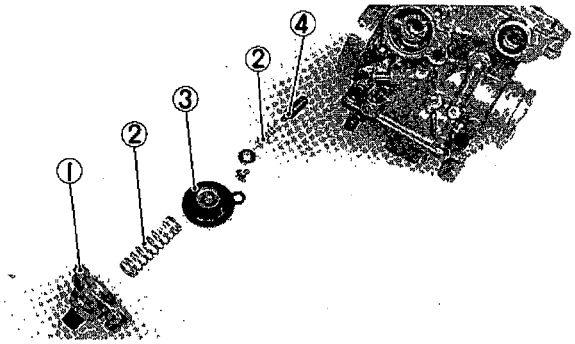
3. Remove:
   - Float chamber
   - Float pin
   - Float
   - Screw
   - Valve seat assembly



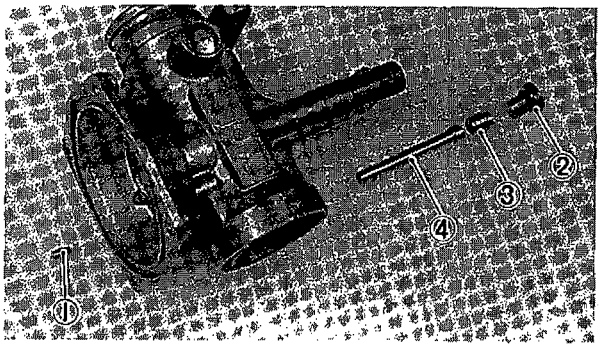
4. Remove:
   - Main jet ①
   - Main nozzle ②
   - Pilot jet ③
   - Pilot screw ④
   - O-rings ⑤



5. Remove:
   - Primary carburetor cap ①
   - Throttle lever assembly ②
   - Piston valve
   - Jet needle



6. Remove:
   - Coasting enricher cover ①
   - Spring ②
   - Diaphragm ③
   - Valve seat ④



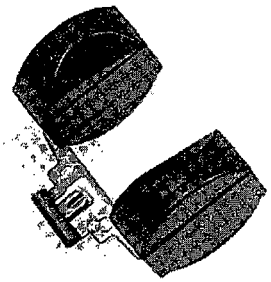
7. Remove:
   - Vacuum piston cover
   - Vacuum piston
   - Main air jet ①
   - Blind plug ②
   - Main jet ③
   - Main nozzle ④

INSPECTION

1. Inspect:
   - Carburetor body
   - Fuel passage

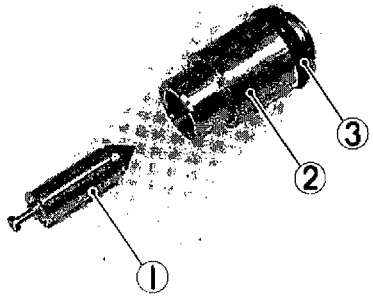
   Contamination→Clean as indicated.

Carburetor cleaning steps:
- Wash carburetor in petroleum based solvent. (Do not use any caustic carburetor cleaning solution).
- Blow out all passages and jets with compressed air.



2. Inspect:
   - Floats

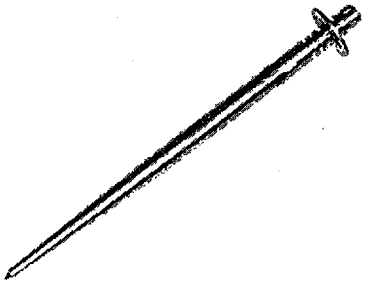
   Damage→Replace.



3. Inspect:
   - Float needle valve ①
   - Seat ②
   - O-ring ③

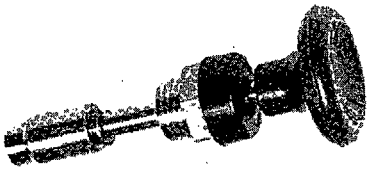
   Damage/Wear/Contamination→Replace as a set
   - Vacuum piston
   - Rubber diaphragm

   Scratches (piston)/Tears (diaphragm)→ Replace.



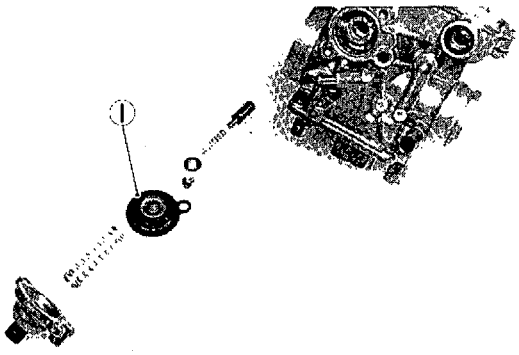
4. Inspect:
   - Jet needle

   Bends/Wear→Replace.



5. Inspect:
   - Starter plunger

   Wear/Damage→Replace.



6. Inspect:
   - Coasting enricher rubber diaphragm ①

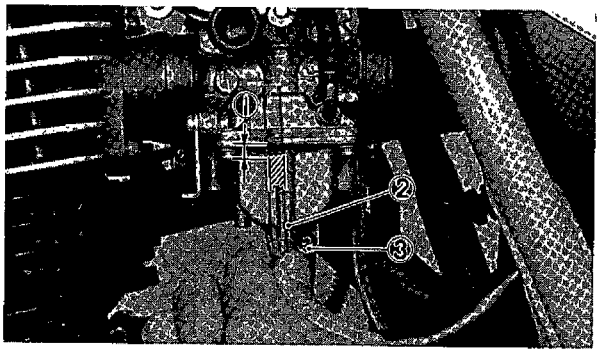
ASSEMBLY

Reverse disassembly steps. Pay close attention to installation of vacuum piston diaphragm and location of each jet.

FUEL LEVEL ADJUSTMENT

NOTE:

Place motorcycle on level surface before checking fuel level.

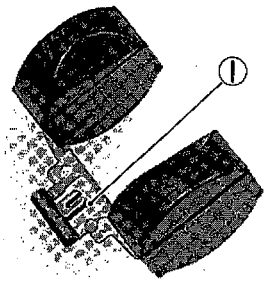


1. Measure:
   - Fuel level ①

Fuel level inspection steps:
- Connect Fuel Level Gauge ② (90890-01312) or vinyl tube, 6 mm (0.24 in) inside diameter, to float bowl nozzle.
- Place tube vertically next to the center of the mating line of the mixing body and float chamber cover.
- Set fuel cock to "ON".
- Loosen the drain screw ③
- Warm up the engine, then shut it off after a few minutes.
- Check the fuel level. It should be within the specified range.

Fuel Level:
6 ± 1.0 mm (0.24 ± 0.04 in)

Out of range→Follow next steps.



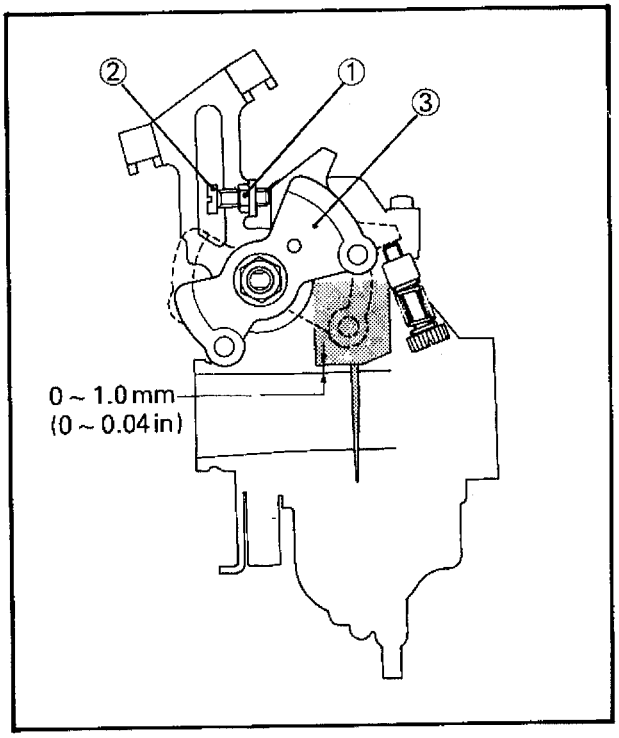
2. Remove:
   - Carburetors
3. Inspect:
   - Float valve assembly
   - Float

   Damage→Replace.

   Components OK→Adjust float height by bending float arm tang ① slightly.

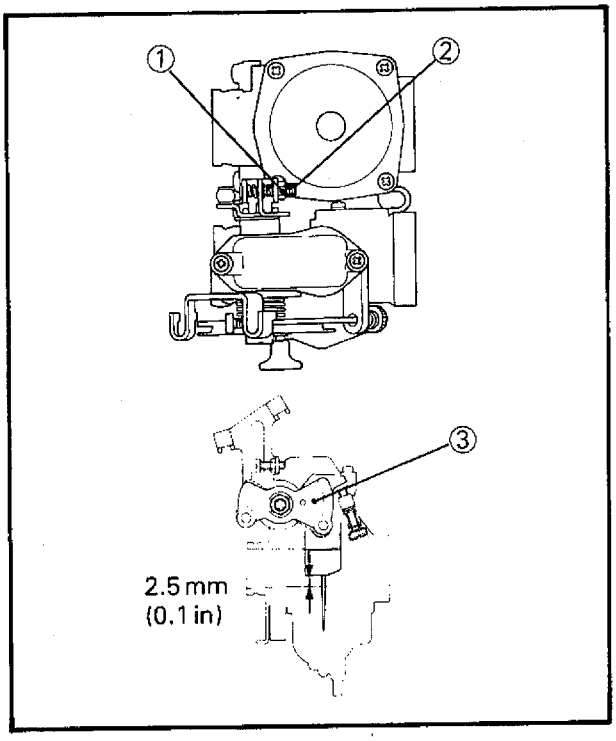
4. Observe:
   - Fuel level

   Level should be within specified range.



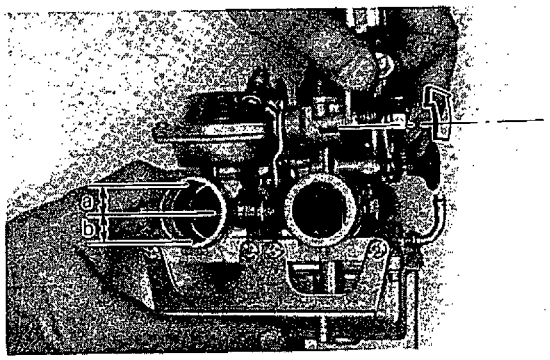
FULL THROTTLE ADJUSTMENT

1. Loosen:
   • Locknut ①
2. Turn the throttle lever ③ to the full-throttle position.
3. Turn the full-throttle adjusting screw ② in or out so that piston valve is positioned as shown.
4. Tighten:
   • Locknut

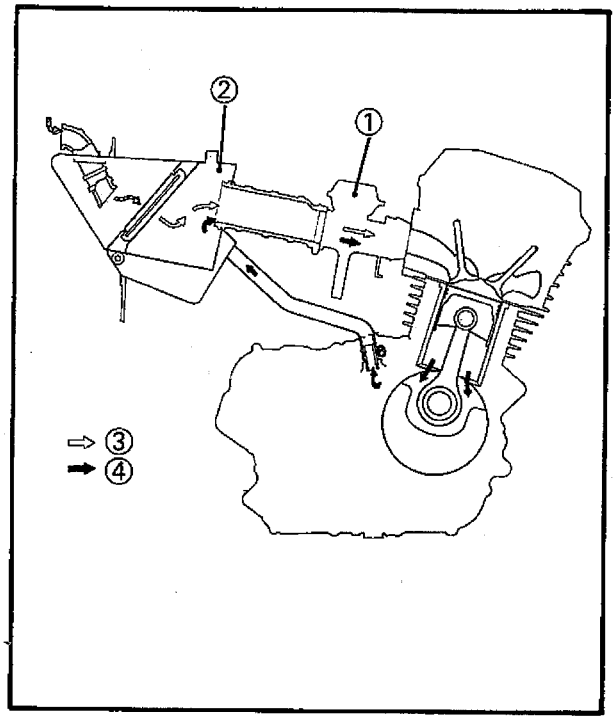


CARBURETOR SYNCHRONIZATION

1. Loosen:
   • Locknut ①
2. Turn the throttle lever ③ to raise the piston valve 2.5 mm (0.1 in) as shown.
3. Turn the synchronizing screw ② in or out so that throttle valve is begun to open.
4. Tighten:
   • Locknut



5. Check:
   • Throttle valve full open
   (a = b)
   Turn the throttle lever to the full-throttle position.



AIR CLEANER AND CRANKCASE VENTILATION SYSTEM

Refer to "CHAPTER 2, Air Cleaner Maintenance."

① Carburetor
② Air cleaner
③ Blow-by gas
④ Fresh air

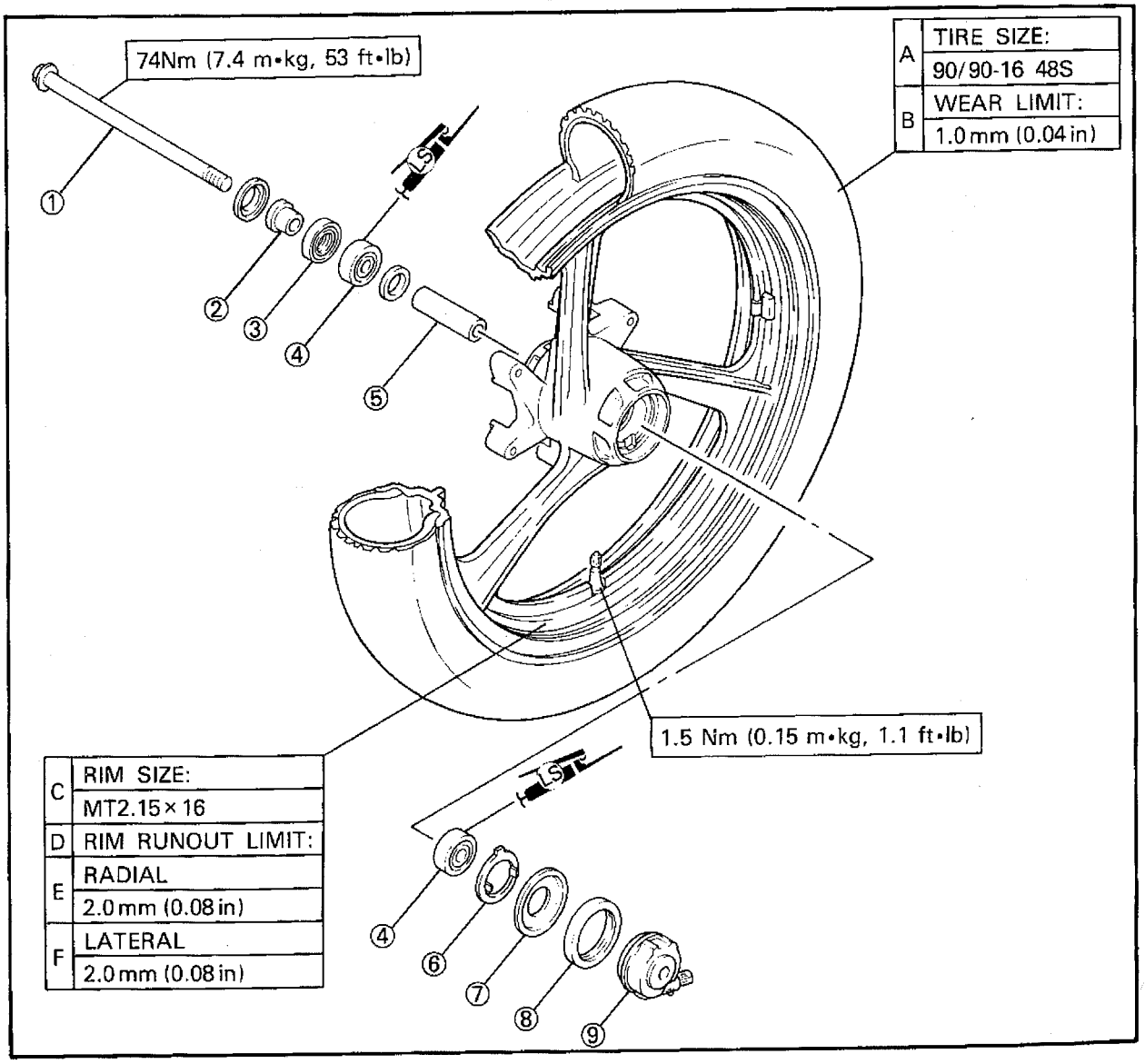
CHASSIS

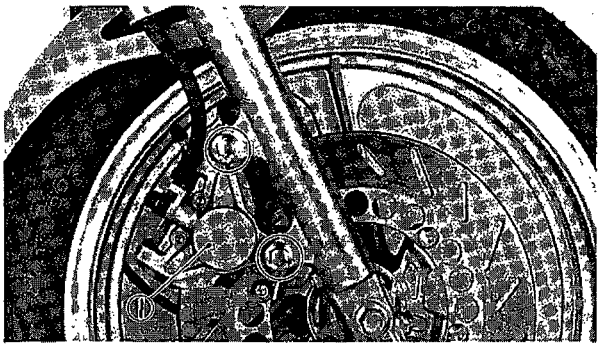
FRONT WHEEL

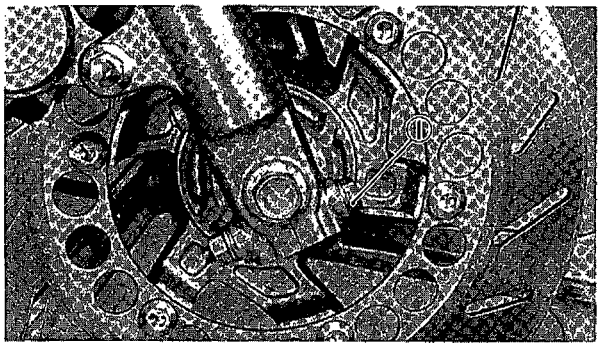
① Front axle
② Collar
③ Oil seal
④ Bearing
⑤ Spacer
⑥ Meter clutch
⑦ Clutch retainer
⑧ Oil seal
⑨ Gear unit assembly

TIRE AIR PRESSURE (COLD):		
Basic weight: With oil and full fuel tank	134 kg (295 lb)	
Maximum load*	130 kg (287 lb)	
Cold tire pressure	Front	Rear
Up to 90 kg (198 lb) load*	177 kPa (1.8 kg/cm², 26 psi)	196 kPa (2.0 kg/cm², 28 psi)
90 kg (198 lb) ~ Maximum load*	196 kPa (2.0 kg/cm², 28 psi)	226 kPa (2.3 kg/cm², 32 psi)
High speed riding	196 kPa (2.0 kg/cm², 28 psi)	226 kPa (2.3 kg/cm², 32 psi)

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







REMOVAL

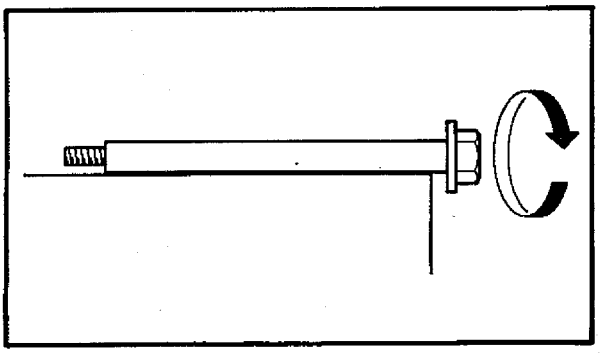
1. Place the motorcycle on its centerstand.
2. Remove:
   - Speedometer cable
   - Brake caliper ①
3. Loosen:
   - Pinch bolt ①
4. Remove:
   - Axle
   - Front wheel

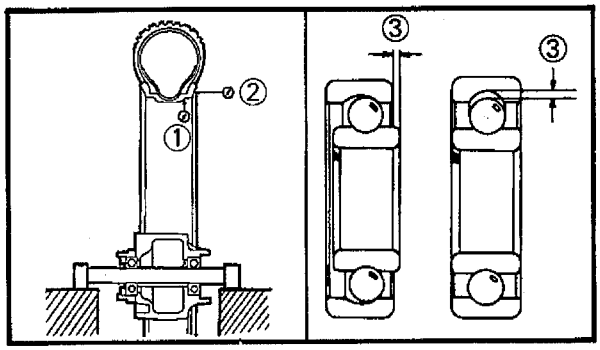
CAUTION:

Make sure the motorcycle is properly supported.

NOTE:

Do not depress the brake lever when the wheel is off the motorcycle otherwise the brake pads will be forced shut.





INSPECTION

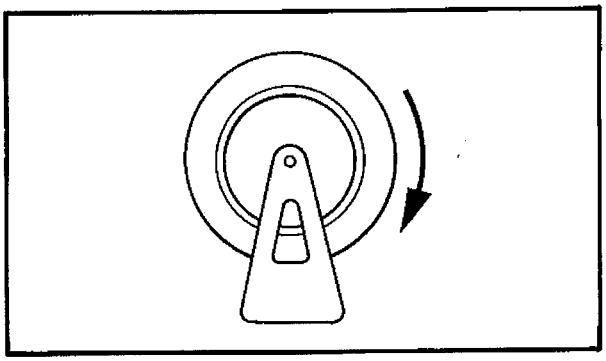
1. Eliminate any corrosion from parts.
2. Inspect:
   - Front axle
     Roll the axle on a Flat Surface.
     Bends→Replace.

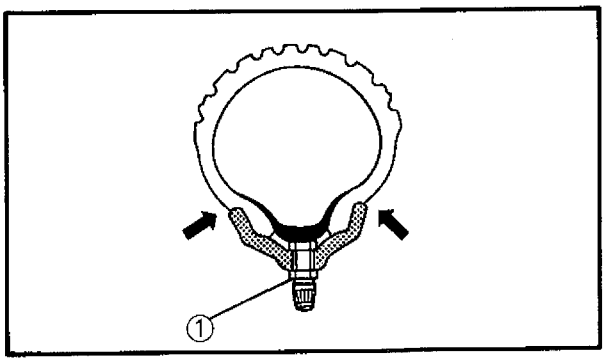
WARNING:

Do not attempt to straighten a bent axle.

3. Inspect:
   - Wheel
     Cracks/Bends/Warpage→Replace.
4. Measure:
   - Wheel runout
     Over specified limit→Replace, wheel or check bearing play ③

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





5. Check:
   - Wheel balance
     Wheel is not statically balanced if it comes to rest at the same point after several light rotations.
     Out of balance→Install appropriate balance weight at lightest point (on top).

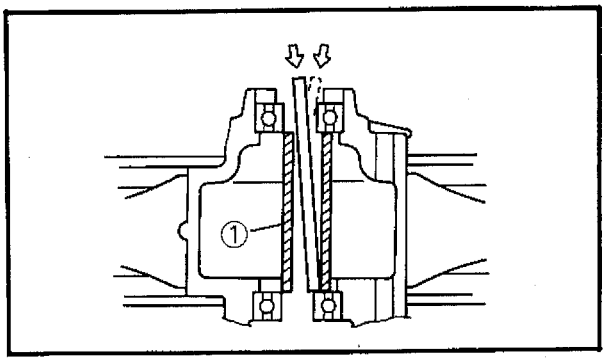
NOTE:
- Balance wheel with brake disc installed.

WARNING:
- **After mounting a tire, ride conservatively to allow proper tire to rim seating. Failure to do so may cause an accident resulting in motorcycle damage and possible operator injury.**
- **After a tire repair or replacement, be sure to torque tighten the valve stem locknut ① to specification.**

	Valve-Stem Locknut: 1.5 Nm (0.15 m•kg, 1.1 ft•lb)

WHEEL BEARING REPLACEMENT

1. Inspect:
   - Wheel bearings
     Wheel hub play/Wheel turns roughly→ Replace.



Wheel bearing replacement steps:
- Clean wheel hub exterior.
- Drive bearing out by pushing spacer aside and tapping around perimeter of bearing inner race. Use soft metal drift punch and hammer. The spacer ① "floats" between bearings. Remove both bearings as described.

WARNING:

Eye protection is recommended when using striking tools.

- To install the wheel bearing, reverse the above sequence. Use a socket that matches outside diameter of bearing outer race to drive in bearing.

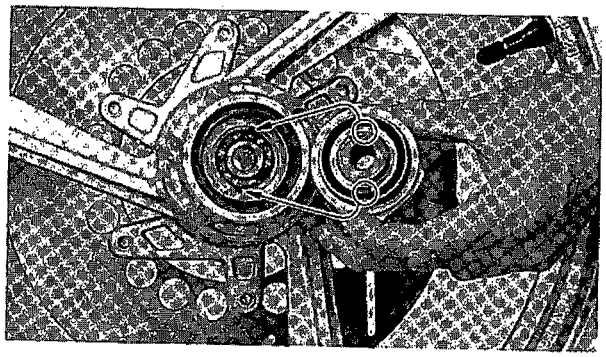
CAUTION

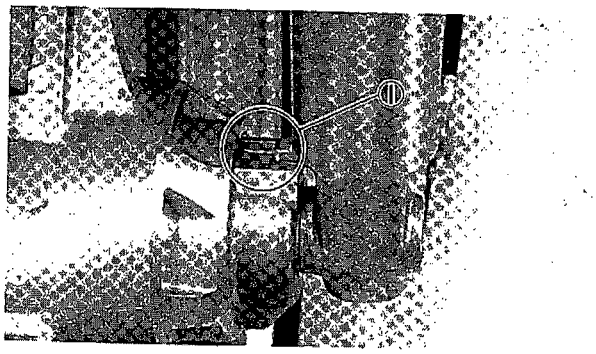
Do not strike the center race or balls of bearing. Contact should be made only with the outer race.

INSTALLATION

1. Install
   - Front wheel

   Reverse removal procedure.





Front wheel installation points:
- Lightly grease lips of front wheel oil seals and gear teeth of speedometer drive and driven gears.
- Be sure the two projections inside the wheel hub are meshed with the two slots in the speedometer housing.
- Be sure that the projecting portion (torque stopper ①) of the speedometer housing is positioned correctly.
- Tighten the axle.

Axle:
74 Nm (7.4 m•kg, 53 ft•lb)

- Tighten the axle pinch bolt.

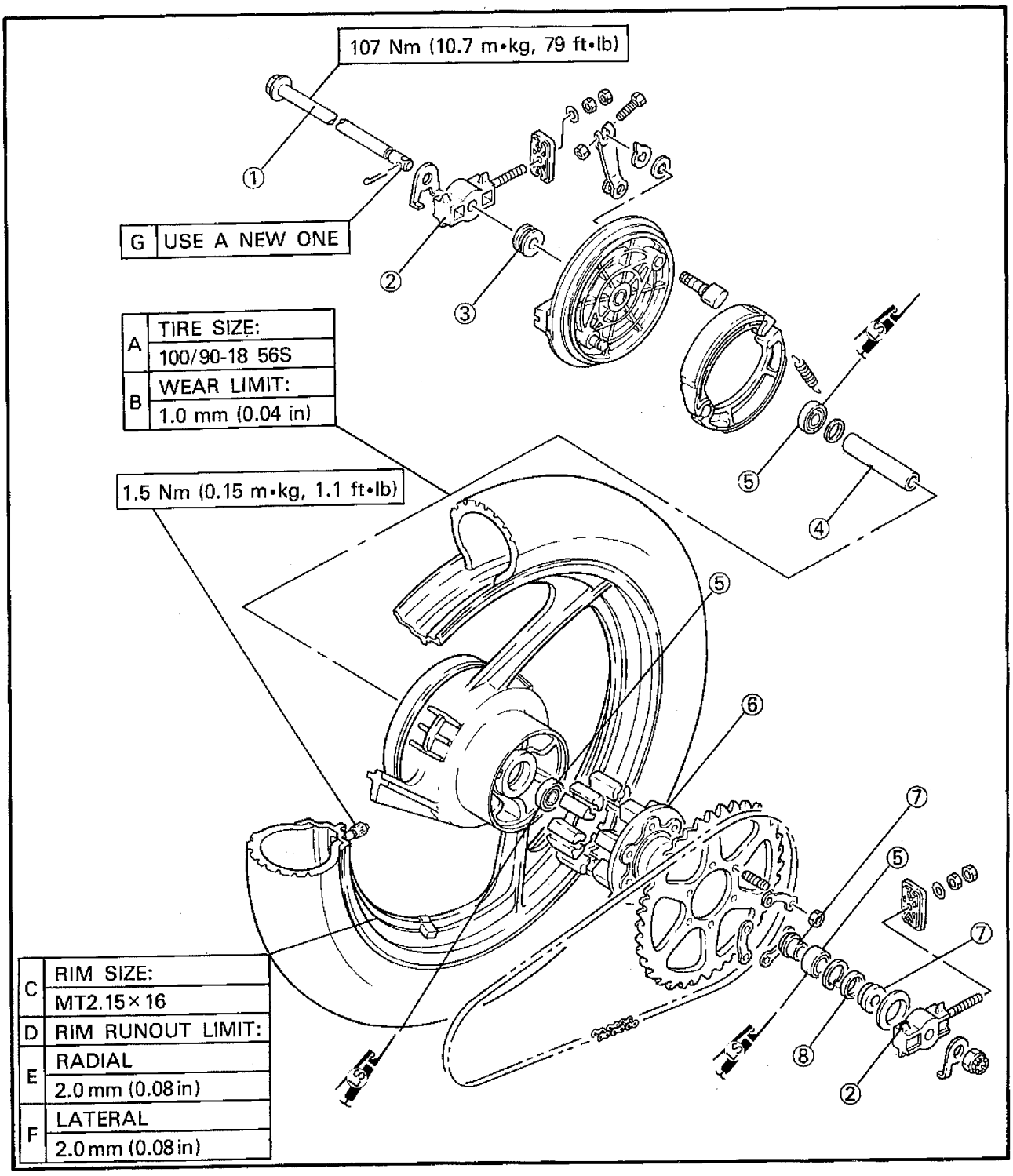
Axle Pinch Bolt:
20 Nm (2.0 m•kg, 14 ft•lb)

- Tighten the brake caliper bolt.

Brake Caliper Bolt:
35 Nm (3.5 m•kg, 25 ft•lb)

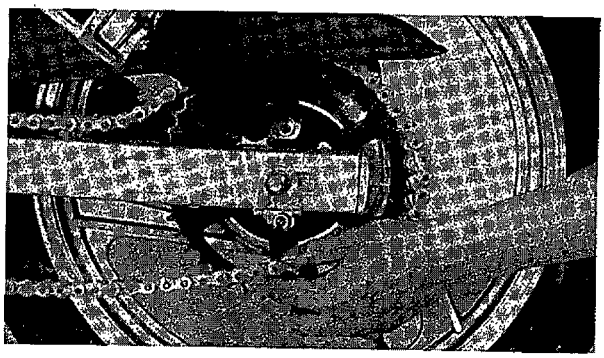
REAR WHEEL

① Rear axle
② Chain puller
③ Collar
④ Spacer
⑤ Bearing
⑥ Clutch hub
⑦ Wheel collar
⑧ Oil seal



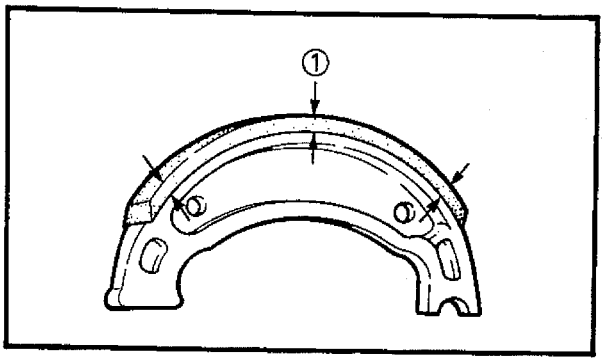
REMOVAL

1. Place the motorcycle on its centerstand.
2. Remove:
   - Cotter pin
   - Axle nut



3. Loosen:
   - Chain puller locknut
4. Remove:
   - Brake rod adjuster
   - Brake rod
   - Chain

5. Remove:
   - Rear axle
   - Collar
   - Rear wheel



INSPECTION

Brake Shoe

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

① Measuring point

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

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

Brake Drum

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

Brake Shoe Plate

1. Remove:
   - Camshaft
2. Inspect:
   - Cam face
     Wear → Replace camshaft.
     Condition OK → Grease camshaft.

Rear Axle

Refer to "Front Axle Inspection."

Rear Wheel

Refer to "Front Wheel Inspection."

Wheel Bearing Replacement

Follow front wheel bearing replacement steps.

INSTALLATION

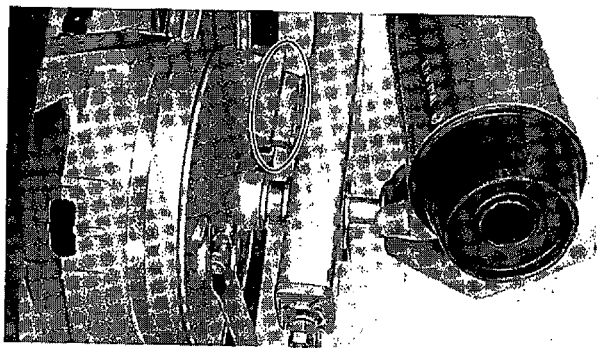
1. Install:
   - Rear wheel

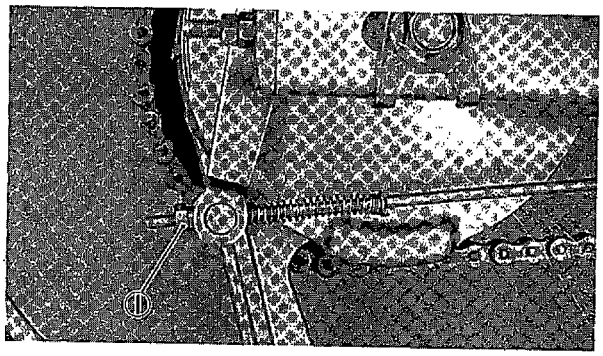
   Reverse removal procedure.

Rear wheel installation points:
- Lightly grease lips of rear wheel oil seals and bearings.
- Be sure that the projecting portion (torque stopper ①) of rear arm is meshed with brake shoe plate.
- Adjust drive chain.
- Tighten

	Axle: **107 Nm (10.7 m•kg, 79 ft•lb)**

- Always use a new cotter pin on the axle nut.





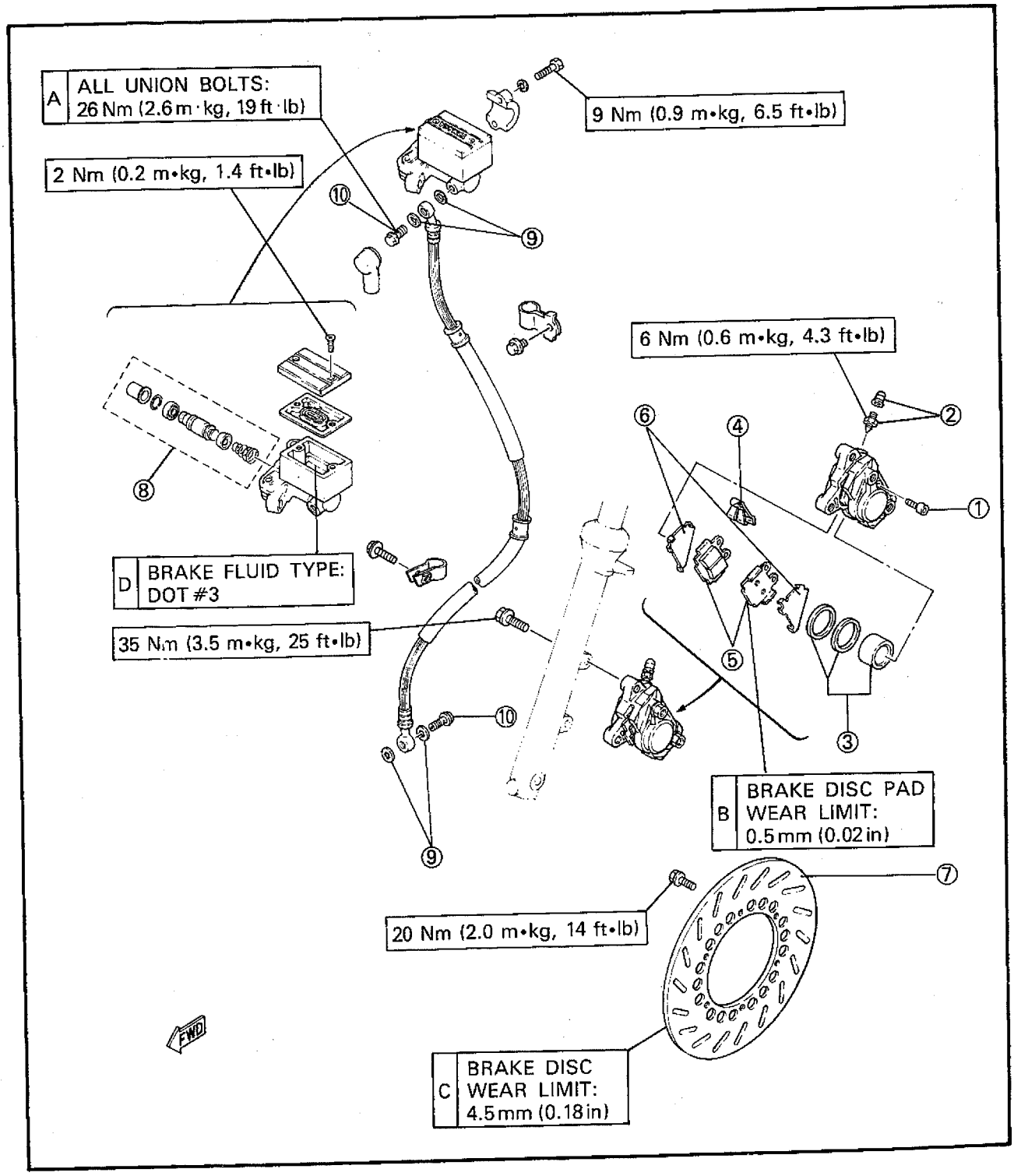
2. Adjust:
   - Rear brake free play.

   Turn adjuster ① as needed.

Adjuster	Rear Brake Free Play
Turn clockwise	to reduce
Turn counterclockwise	to increase

FRONT BRAKE

① Retaining bolt
② Air bleed screw
③ Caliper piston assembly
④ Pad spring
⑤ Brake pad
⑥ Pad shim
⑦ Brake disc
⑧ Master cylinder kit
⑨ Copper washer
⑩ Union bolt



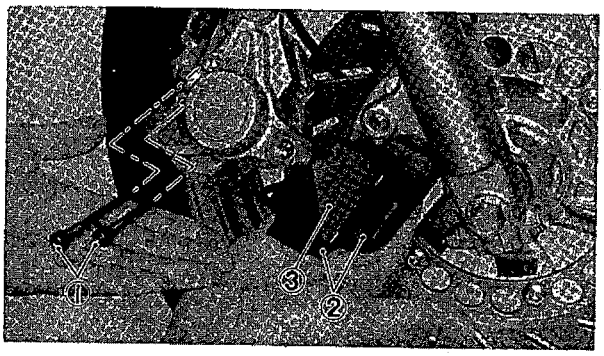
CAUTION:

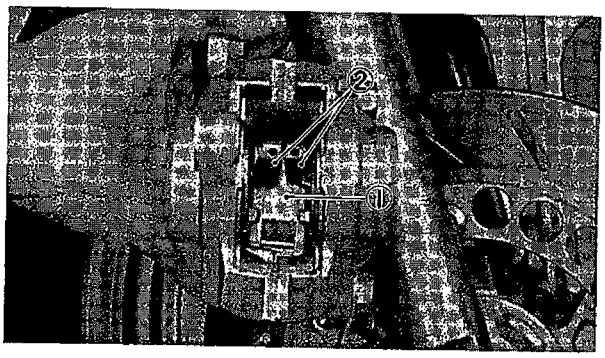
Disc brake components rarely require disassembly. DO NOT:

- **Disassembly components unless absolutely necessary.**
- **Use solvents on internal brake component.**
- **Use contaminated brake fluid for cleaning. Use only clean brake fluid.**
- **Allow brake fluid to come in contact with the eyes otherwise eye injury may occur.**
- **Allow brake fluid to contact painted surfaces or plastic parts otherwise damage may occur.**
- **Disconnect any hydraulic connection otherwise the entire system must be disassembled, drained, cleaned, and then properly filled and bled after reassembly.**

NOTE:

Drain the brake fluid before removing brake hose.





BRAKE PAD REPLACEMENT

1. Remove:
   - Brake caliper bolts
   - Retaining bolts ①
   - Pads ②
   - Pad shims ③

2. Remove
   - Pad spring ①

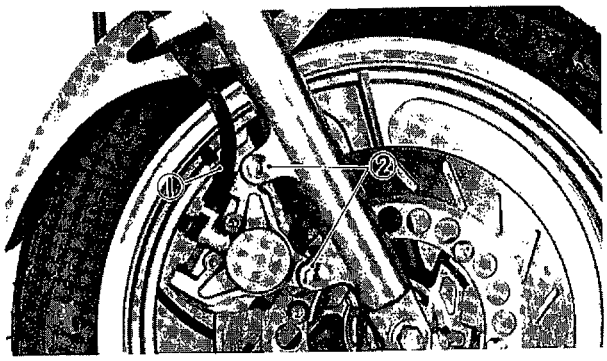
   ② Spring tang

3. Install:
   - Pads (New)

   Reverse removal steps.

NOTE:

- Install the pad spring with its tangs facing upwards.
- Replace pads as a set if either is found to be worn to the wear limit.



CALIPER DISASSEMBLY

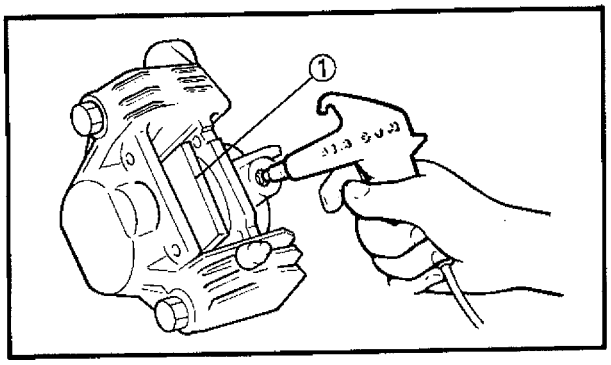
1. Remove:
   - Brake hose ①
   - Caliper securing bolts ②
   - Brake pads
   - Brake shims
   - Pad spring

2. Remove:
   - Caliper piston assembly

   Use compressed air and procede carefully.

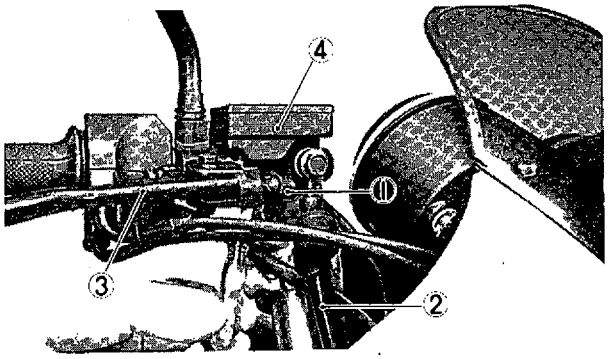
WARNING:

- **Cover piston with rag and use extreme caution when expelling piston from cylinder.**
- **Never attempt to pry out piston.**



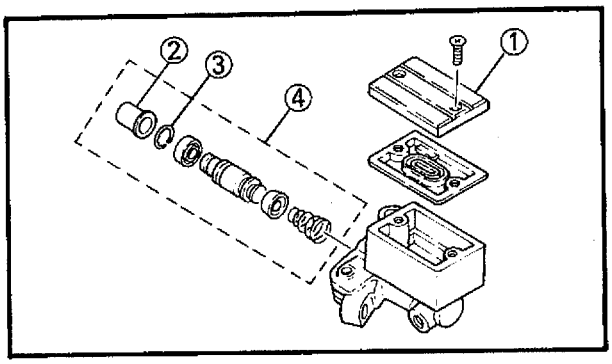
Caliper piston removal steps:

- Insert a piece of wooden board ① into the caliper to lock the piston.
- Blow compressed air into the hose joint opening to force out the piston from the caliper body.
- Repeat previous step to force out the other piston from the caliper body.



MASTER CYLINDER DISASSEMBLY

1. Remove:
   - Brake light leads ①
   - Brake hose ②
   - Breke lever ③ and spring
   - Master cylinder assembly ④



2. Remove:
   - Cap ①

   Drain remaining fluid
   - Master cylinder dust boot ②
   - Circlip ③
   - Master cylinder cup assembly

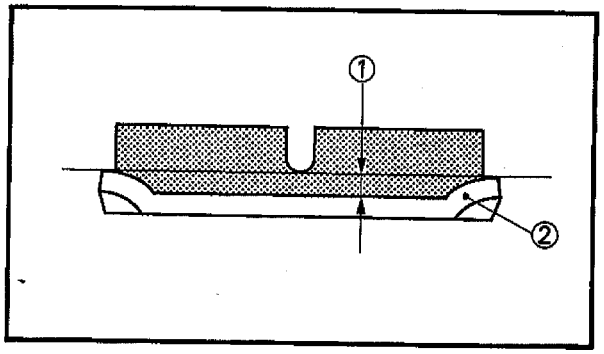
NOTE:

Be sure to reinstall the larger diameter lips of the cylinder cups first.

④ Master cylinder kit

INSPECTION AND REPAIR

Recommended Brake Component Replacement Schedule	
Brake pads	As required
Piston seal, dust seal	Every 2 years
Brake hoses	Every 4 years
Brake fluid	Replace only when brakes disassembled

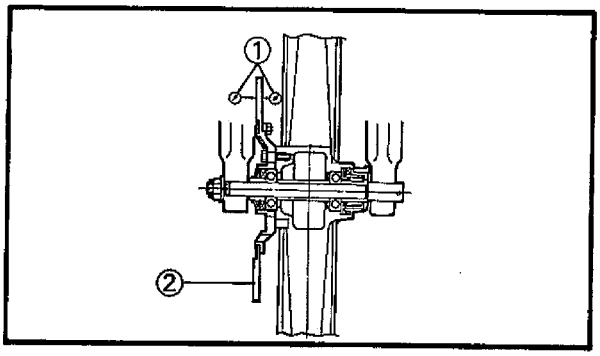


1. Inspect:
   - Caliper piston assembly
     Damage/Scratches→Replace.
   - Brake pad
     Over wear limit ①→Replace as a set.

Brake Pad Wear Limit:
0.5 mm (0.02 in)

② Wear indicator

2. Inspect:
   - Master cylinder body
     Scratches→Replace.
     Clean all passages with new brake fluid.
   - Brake hoses
     Cracks/Frayed/Damage→Replace.



3. Inspect:
   - Brake disc ②
     Wear/Deflection out of specification→ Replace.

Maximum Deflection:
0.15 mm (0.006 in)
Minimum Disc Thickness:
4.5 mm (0.18 in)

① Dial gauge

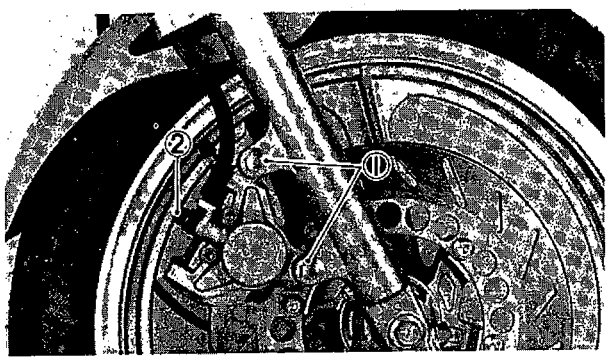
ASSEMBLY

Caliper

NOTE:

- All internal parts should be cleaned in new brake fluid only.
- Internal parts should be lubricated with brake fluid when installed.
- Replace the piston and dust seals whenever the caliper is disassembled.

1. Install:
   - Caliper piston assembly
   - Pad spring
   - Brake pads
   - Pad shims
   - Caliper assembly



2. Tighten:
   - Caliper securing bolts ①

	35 Nm (3.5 m•kg, 25 ft•lb)

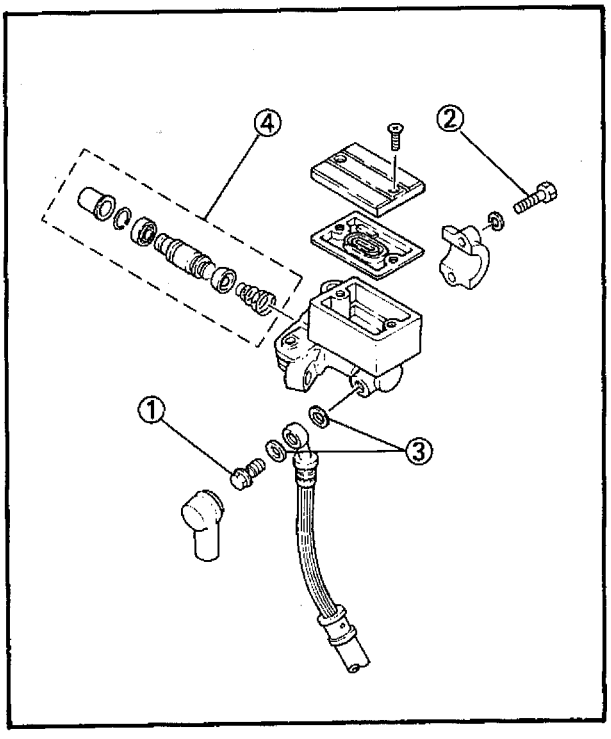
   - Brake hose union bolts ②

	26 Nm (2.6 m•kg, 19 ft•lb)

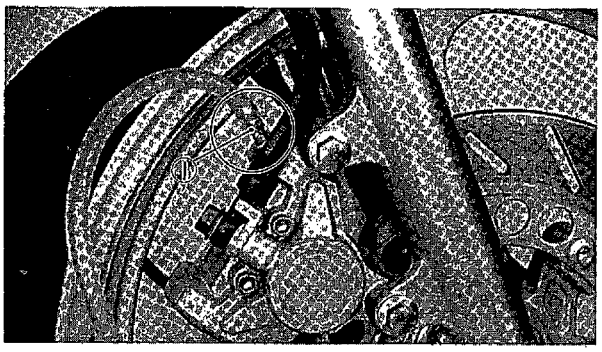
Master Cylinder

1. Assemble:
   - Master cylinder

	Union Bolt ①: **26 Nm (2.6 m•kg, 19 ft•lb)** **Master Cylinder Holding Bolt ②:** **9 Nm (0.9 m•kg, 6.5 ft•lb)**



③ Copper washer
④ Master cylinder kit



AIR BLEEDING

WARNING:

Bleed the brake system if:
- **The system has been disassembled.**
- **A brake hose has been loosened or removed.**
- **The brake fluid is very low.**
- **The brake operation is faulty.**

A dangerous loss of braking performance may occur if the brake system is not properly bled.

Air bleeding steps:

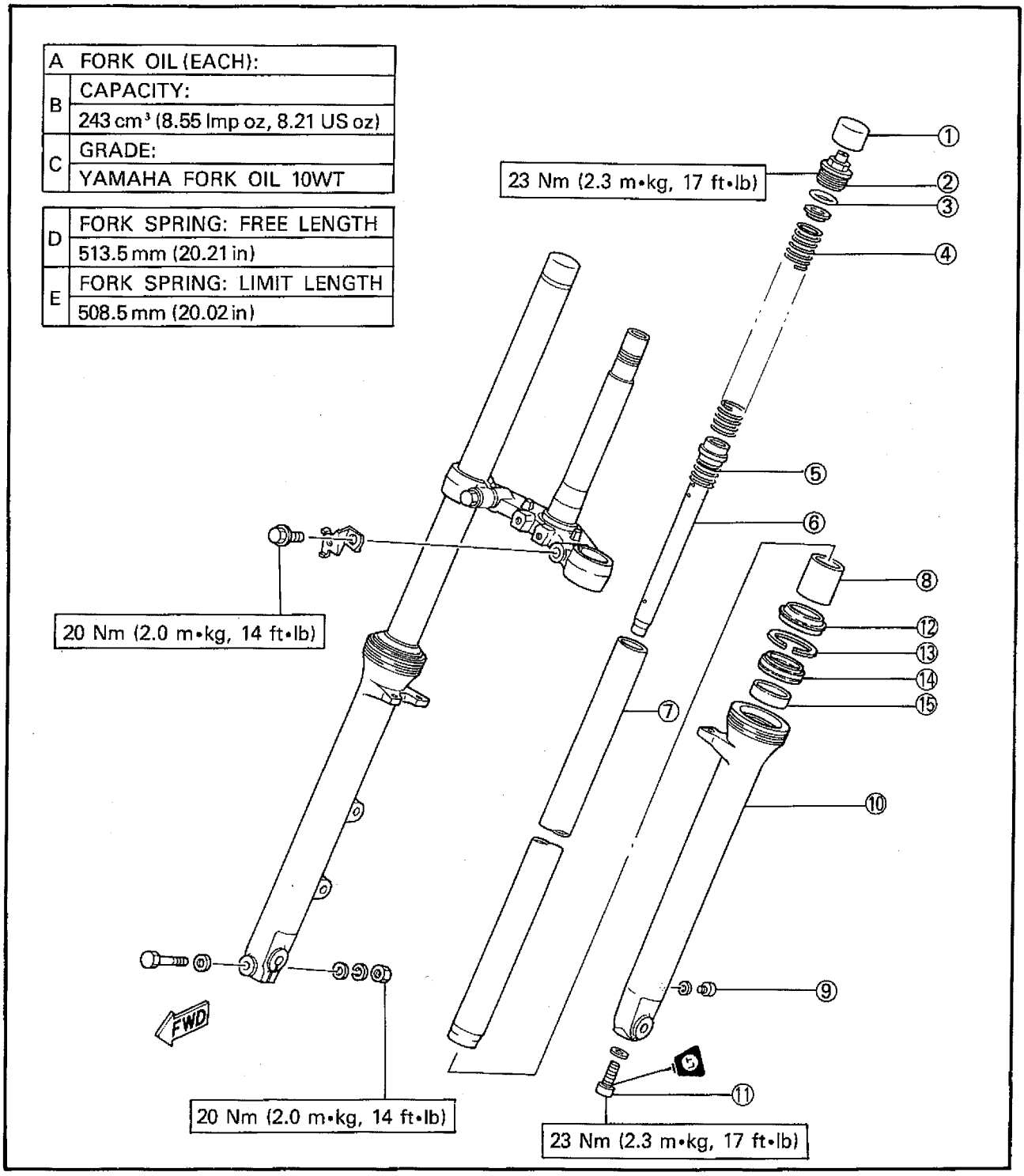
a. Add proper brake fluid to the reservoir.
b. Install diaphragm.
   Be careful not to spill any fluid or allow the reservoir to overflow.
c. Connect the clear plastic tube (4.5 mm, 3/16 in inside dia.) tightly to the caliper bleed screw ①.
d. Place the other end of the tube into a container.
e. Slowly apply the brake lever several times.
f. Pull the lever in. Hold the lever in position.
g. Loosen the bleed screw and allow the lever to travel towards its limit.
h. Tighten the bleed screw when the lever limit has been reached; then release the lever.
i. Repeat steps (e) to (h) until all of the air bubbles have been removed from the system.

NOTE:

If bleeding is difficult, it may be necessary to let the brake fluid system stabilize for a few hours. Repeat the bleeding procedure when the tiny bubbles in system have disappeared.

FRONT FORK

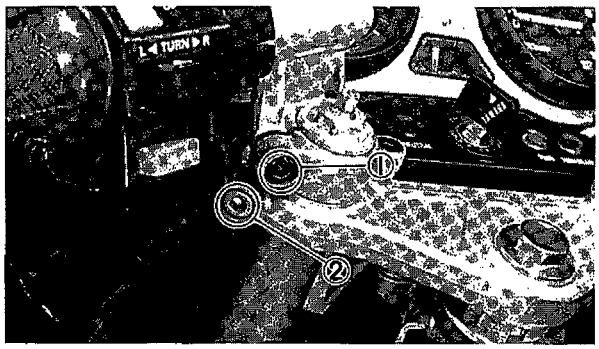
① Rubber cap
② Cap bolt
③ O-ring
④ Fork spring
⑤ Damper rod spring
⑥ Damper rod
⑦ Inner fork tube
⑧ Taper spindle
⑨ Drain bolt
⑩ Outer fork tube
⑪ Damper rod securing bolt
⑫ Dust cover
⑬ Retaining clip
⑭ Oil seal
⑮ Guide bushing



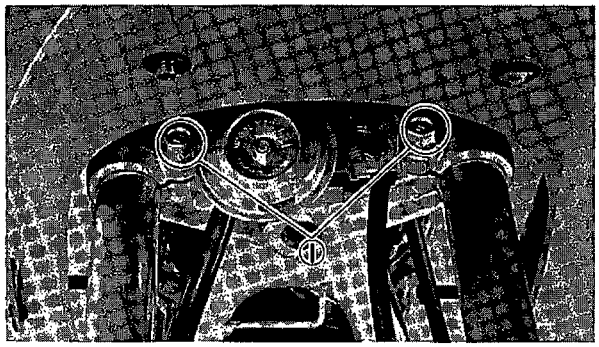
REMOVAL AND DISASSEMBLY

WARNING:

Support the motorcycle securely so there is no danger of it falling over.



1. Remove:
   - Brake caliper
   - Front wheel
2. Remove:
   - Front fender
   - Front fork brace
   - Rubber cap
3. Loosen:
   - Cap bolt
   - Handlebar pinch bolt ①
   - Upper front fork pinch bolt ②

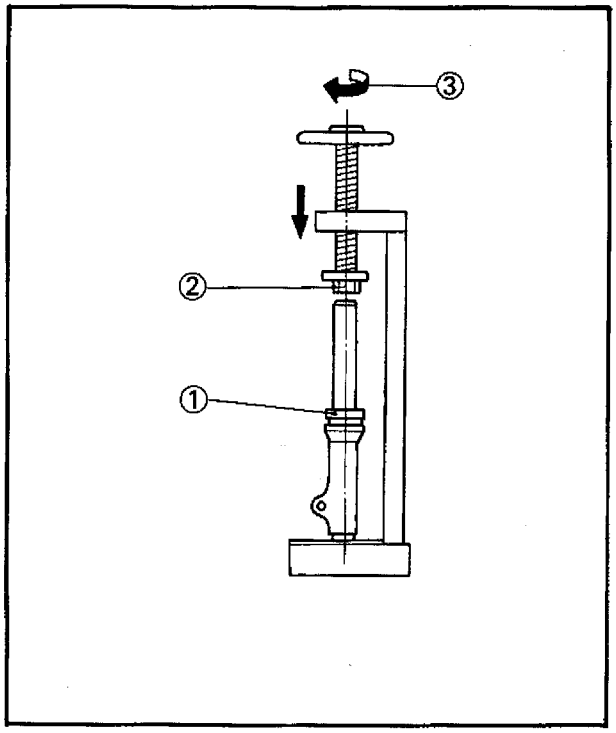


4. Loosen:
   - Lower front fork pinch bolt ①

CAUTION:

Support the fork before loosening the pinch bolts.

5. Remove:
   - Front fork assembly
     (from the under bracket)
6. Remove:
   - Cap bolt
   - Spring seat
   - Fork spring
   - Dust cover
   - Retaining clip
7. Fill:
   - Fork inner tube
     (with fork oil)
     Stretch the inner tube before filling.
8. Install:
   - Cap bolt



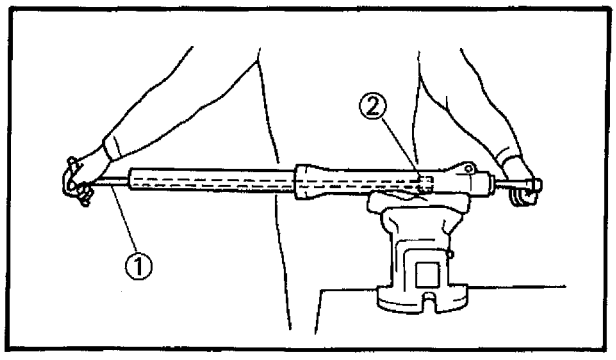
9. Remove:
   - Oil seal
     (from outer tube.)
     Press the inner tube to facilitate removal.

CAUTION:

- **If air enters the inner tube or it is compressed abruptly, oil may spurt out or the oil seal may be ejected.**
- **Never touch the inner tube during a disassembly operation.**
- **Be sure to wrap the oil seal with a rag for safety.**

① Wrap with rag
② Spacer
③ Turn slowly

10. Remove:
    - Oil seal
    - Cap bolt
11. Drain:
    - Fork



12. Remove:
    - Damper rod securing bolt
      Use T-handle ① (90890-01326) and Front Fork Cylinder Holder (90890-04084) ② to lock the damper rod.
13. Remove:
    - Damper rod
    - Damper rod spring
    - Inner fork tube
    - Guide bushing
      (from outer tube)
    - Taper spindle

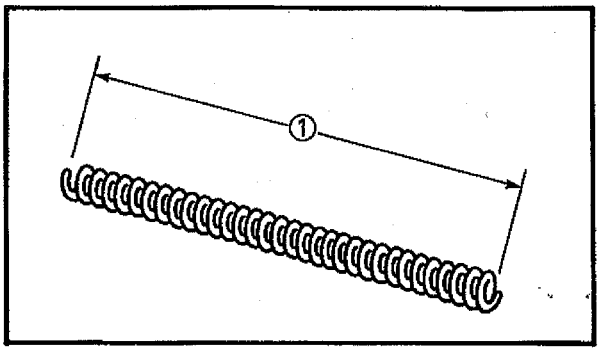
INSPECTION

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

WARNING:

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

2. Inspect:
   - Outer fork tube
     Bends→Replace.
     Damaged fork seal seat→Replace.
   - Fork oil seal
     Lip damage→Replace.
     Outer surface damage→Replace.



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

Fork Spring Free Length Limit:
508.5 mm (20.0 in)

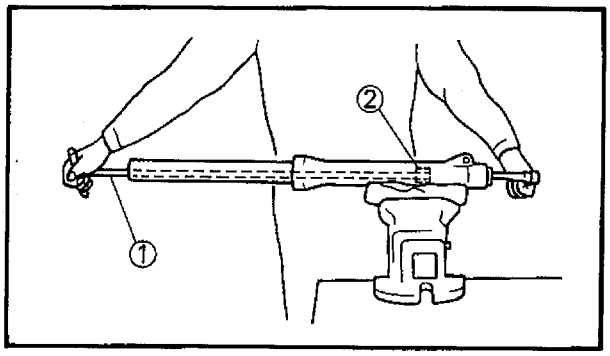
4. Inspect:
   - Damper rod
     Worn damper rod seal→Replace.
     Contamination→Wash and blow out all passages.
   - Cap bolt O-ring
     Damage→Replace.

ASSEMBLY

NOTE:

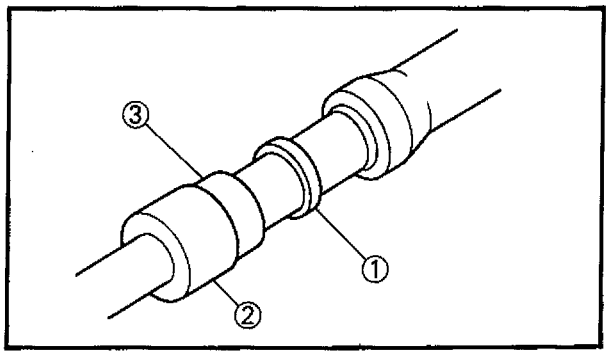
Be sure all components are clean before assembly.

1. Install:
   - Damper rod spring
   - Damper rod
     Allow rod to slide slowly down the inner fork tube until it protrudes from the bottom.
   - Taper spindle
   - Inner fork tube

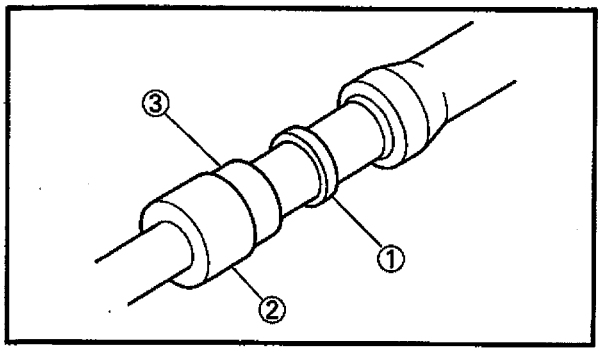


2. Install:
   - Damper rod securing bolt
     Hold damper rod with Front Fork Cylinder Holder ② (90890-04084) and T-handle ① (90890-01326).

	23 Nm (2.3 m•kg, 17 ft•lb) **LOCTITE®**



3. Install:
   - Guide bushing ①
     Press guide bushing into the outer fork tube with Fork Seal Driver ② (90890-01367) and Adapter (90890-01368) ③.

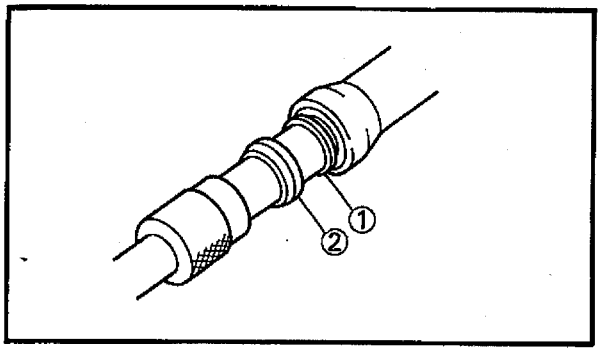


4. Install:
   - Fork oil seal ①

   Press fork oil seal into the outer fork tube with Fork Seal Driver ② (90890-01367) and Adapter (90890-01368) ③.

CAUTION:

Be sure oil seal numbered side face upward.



5. Install:
   - Circlip ①
   - Dust seal ②

   Use Fork Seal Driver (90890-01367) and Adapter (90890-01368).

6. Fill:
   - Inner tube

   (with fork oil)

Capacity (each):
243 cm³ (8.55 Imp oz, 8.21 US oz)
Type:
Yamaha Fork Oil 10WT

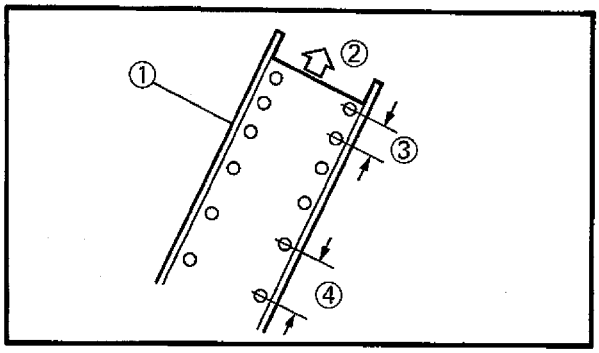
NOTE:

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

7. Install:
   - Fork spring

NOTE:

Be sure the short pitch ③ side face upward.



   - Spring seat
   - Cap bolt

   (into the inner fork tube)

① Inner tube
② Upward
④ Long pitch

8. Install:
   - Front fork assembly
     (into the underbracket, handle crown, and handlebar)

NOTE:

Be sure the inner fork tube end is flush with the top of the handlebar.

9. Tighten:
   - Handlebar bolt
   - Upper front fork pinch bolt
   - Cap bolt



Upper Pinch Bolt:
Handlebar Bolt:
20 Nm (2.0 N•kg, 14 ft•lb)
Cap Bolt:
23 Nm (2.3 m•kg, 17 ft•lb)

10. Tighten:
    - Lower front fork pinch bolt.



Lower Pinch Bolt:
20 Nm (2.0 m•kg, 14 ft•lb)

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

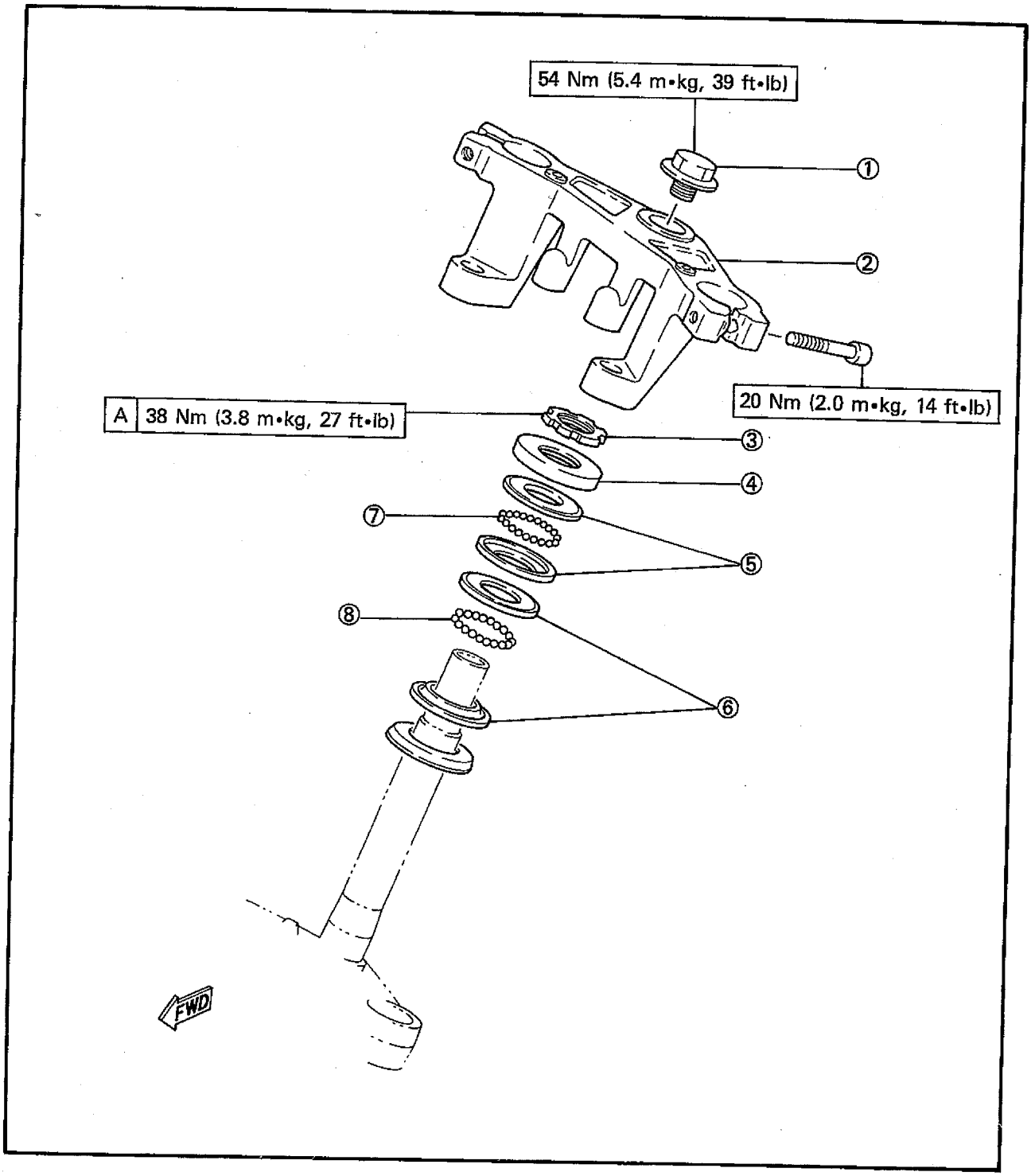


Disc Brake Caliper:
35 Nm (3.5 m•kg, 25 ft•lb)
Front Wheel Axle:
74 Nm (7.4 m•kg, 53 ft•lb)
Wheel Axle Pinch Bolt:
20 Nm (2.0 m•kg, 14 ft•lb)

STEERING HEAD

① Steering stem bolt
② Handle crown
③ Ring nut
④ Bearing cover
⑤ Upper bearing races
⑥ Lower bearing races
⑦ Bearing (Upper)
⑧ Bearing (Lower)

A	• Tighten to specified torque. • If steering is binded, loosen the ring nut so that there is no free play on bearing.



STEERING HEAD

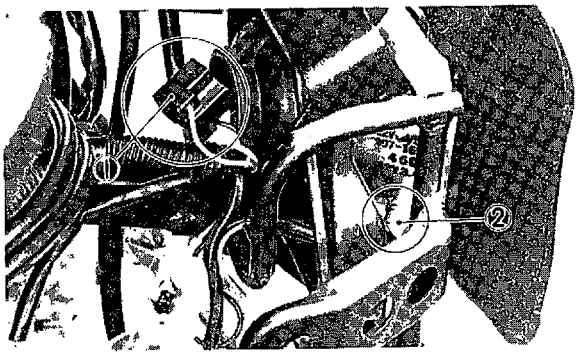
ADJUSTMENT

Refer to Chapter 2. "STEERING HEAD ADJUSTMENT".

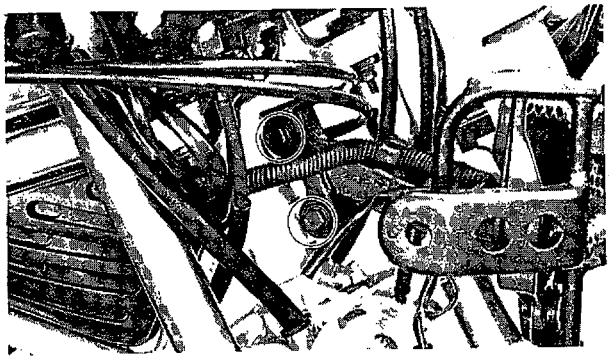
REMOVAL

1. Remove:
   - Cowling

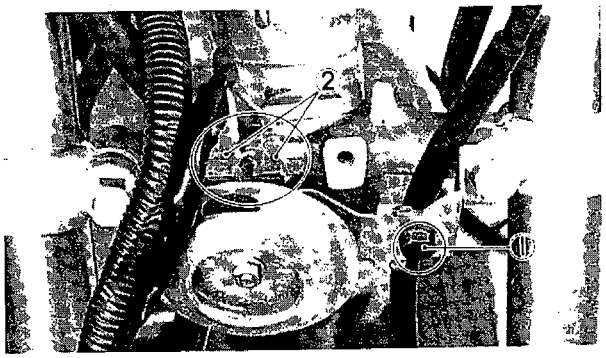
   Refer to "Engine Removal".



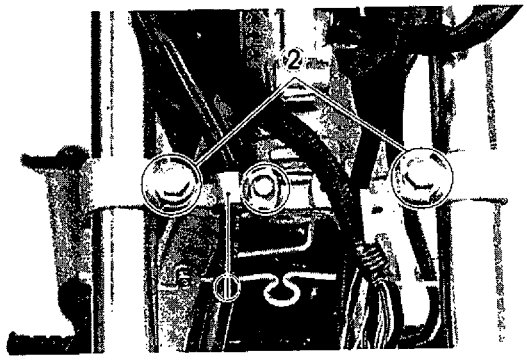
2. Disconnect:
   - Headlight lead ①
   - Marker light ②



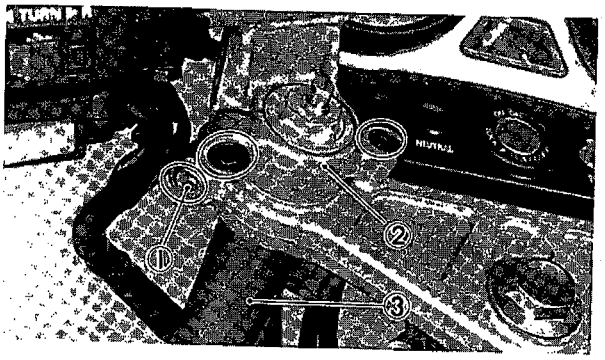
3. Remove:
   - Headlight stay and headlight assembly



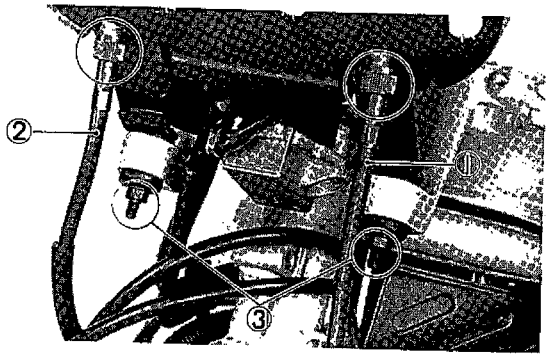
4. Remove:
   - Horn securing bolt ①
5. Disconnect:
   - Horn leads ②



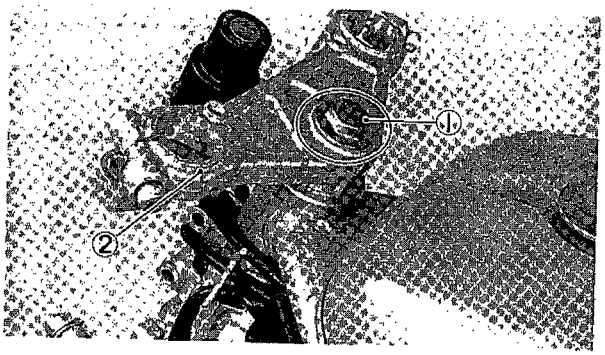
6. Remove:
   - Front wheel
   - Fender
   - Front fork brace
   - Brake hose clamp ①
7. Loosen:
   - Lower front fork pinch bolts ②



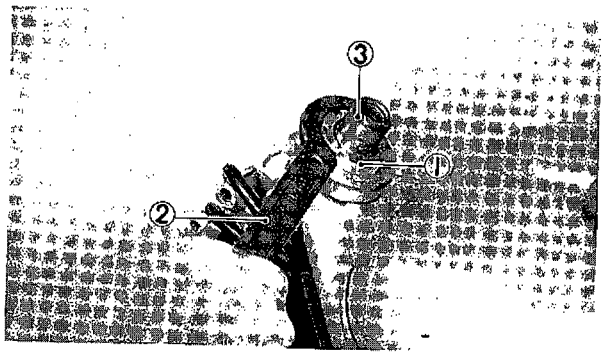
8. Loosen:
   - Upper front fork pinch bolts ①
9. Remove:
   - Rubber caps
   - Handlebar assembly ②
   - Front forks ③



10. Disconnect:
    - Speedometer cable ①
    - Tachometer cable ②
11. Remove:
    - Meter panel securing nuts ③
    - Meter panel



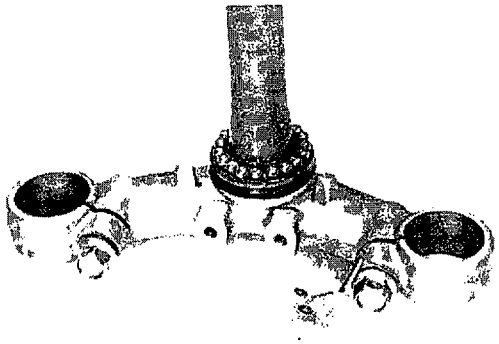
12. Remove:
    - Steering stem bolt ①
    - Handle crown ②

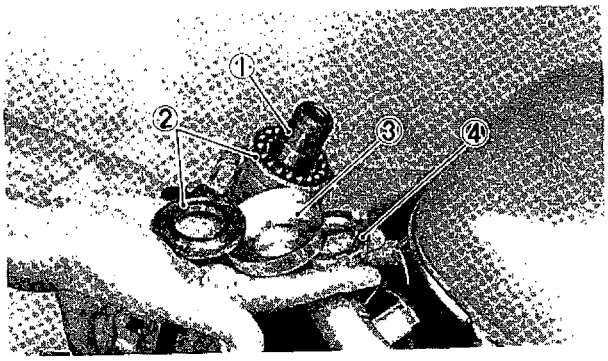


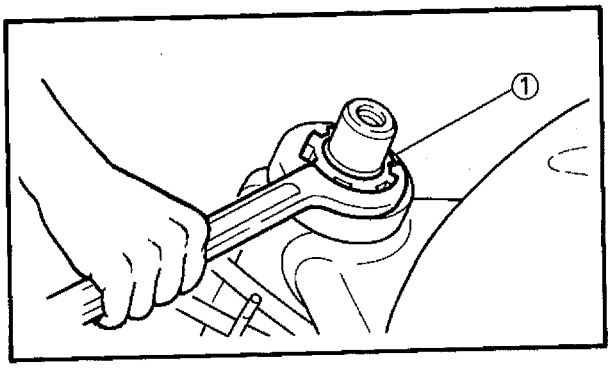
13. Remove:
    - Ring nut ①
      Use Ring Nut Wrench ② (90890-01268)
    - Bearing covers
    - Bearings
    - Steering stem ③

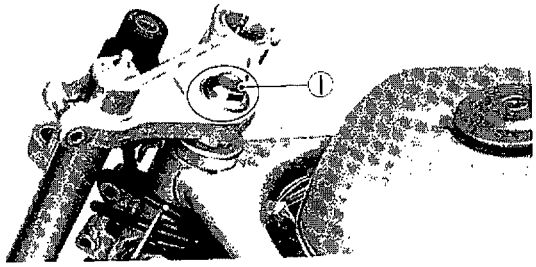
INSPECTION

1. Check:
   - Bearing
     Pitting/Damage→Replace races and bearing.









ASSEBMLY

1. Lubricate:
   - Bearings

	Wheel Bearing Grease

2. Install:
   - Lower bearing (onto steering stem)
   - Steering stem ①
   - Upper bearing ②
   - Bearing cover ③
   - Ring nut ④

Lower & Upper Bearing 19 P.C.S/1/4 in

3. Tighten:
   - Ring nut ①

	Ring Nut: 38 Nm (3.8 m•kg, 27 ft•lb)

4. Install:
   - Handle crown
5. Position:
   - Fornt fork (into handle crown)

   This will facilitate alignment of under bracket holes with handle crown holes.
6. Tighten:
   - Steering stem bolt ①

	54 Nm (5.4 m•kg, 39 ft•lb)

7. Continue assembly by reversing removal sequence.
8. Check:
   - Steering head operation

   Turn it from lock to lock.

   Looseness/Binding→Readjust tightness of steering stem.

REAR SHOCK ABSORBER/REAR ARMS

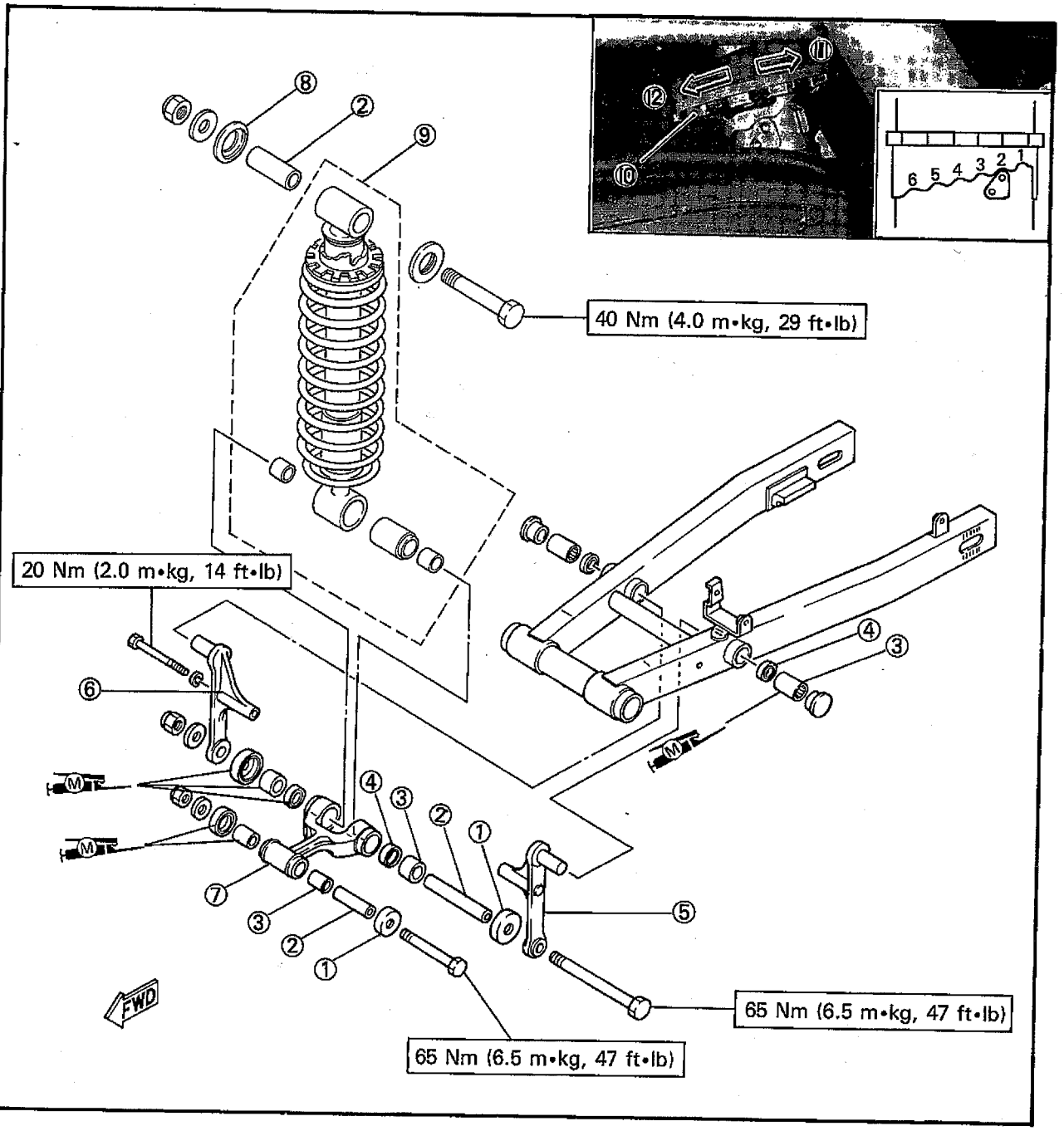
① Thrust cover
② Collar
③ Bushing
④ Oil seal
⑤ Arm 1
⑥ Arm 2
⑦ Relay arm
⑧ Dust cover
⑨ Rear shock absorber assembly
⑩ Adjuster
⑪ Hard
⑫ Soft

SPRING PRELOAD ADJUSTMENT:

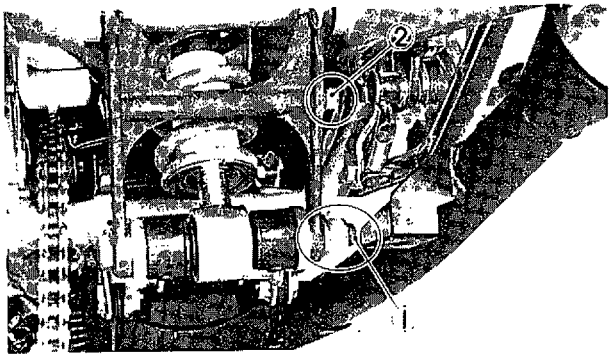
	Hard				STD	Soft
Adjusting position	6	5	4	3	2	1

NOTE:

Coat the bushings, thrust washers, dust seals, and bolts with a liberal amount of molybdenum disulfite grease before installing. After installing, thoroughly wipe off excess grease.

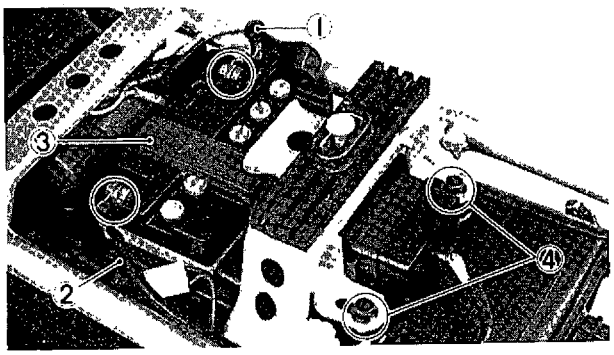


REAR SHOCK ABSORBER/REAR ARMS

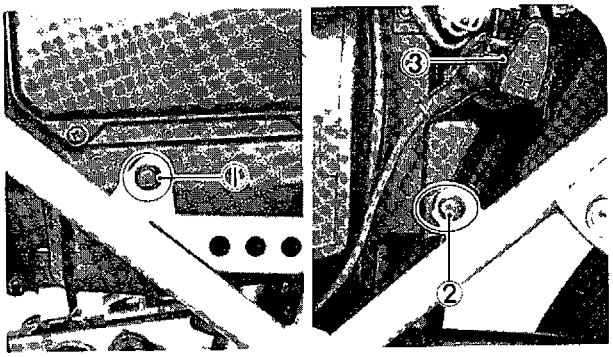


REMOVAL

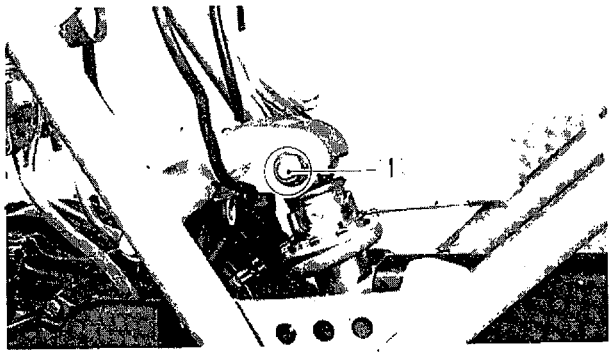
1. Remove:
   - Rear wheel
2. Remove:
   - Shock absorber lower securing bolt ①
   - Thrust covers
   - Collars
   - Arm securing bolt ②



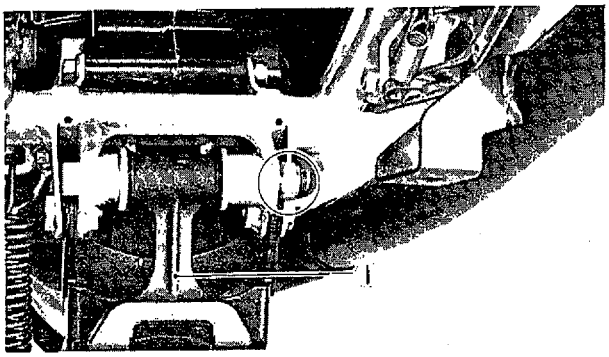
3. Remove:
   - Seat
   - Fuel tank
   - Battery plus lead ①
   - Battery ground lead ②
   - Battery band ③
   - Battery
   - Air cleaner case upper bolts ④



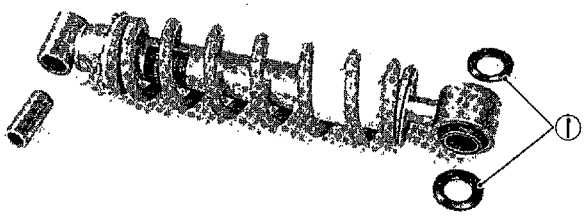
4. Remove:
   - Right side cover
   - Air cleaner case right bolt ①
   - Left side cover
   - Air cleaner case left bolt ②
   - Starter relay ③
   - Air cleaner case assembly



5. Remove:
   - Shock absorber upper securing bolt ①
   - Shock absorber

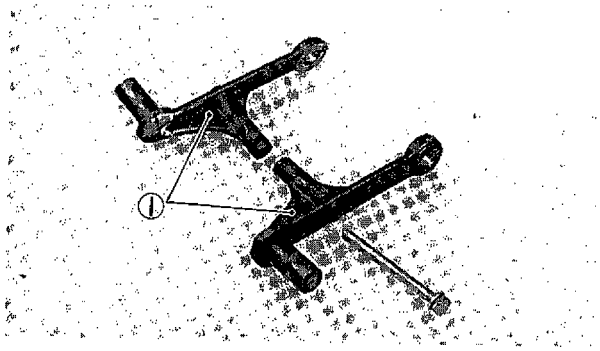


6. Remove:
   - Relay arm ①
   - Thrust covers
   - Collar

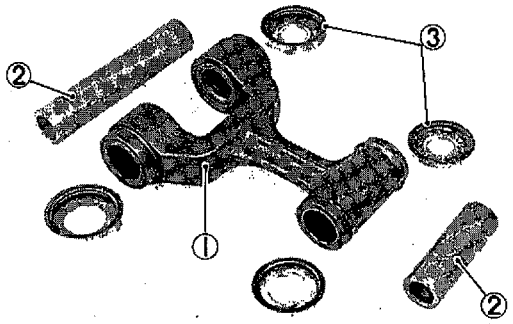


INSPECTION

1. Inspect:
   - Rear shock absorber
     Oil leaks/Damage→Replace.
   - Dust cover ①
     Damage→Replace.



2. Inspect:
   - Arms ①
     Damage/Wear→Replace.



3. Inspect:
   - Relay arm ①
   - Collars ②
   - Thrust cover ③
     Damage/Wear→Replace.

INSTALLATION

Reverse removal steps.

1. Grease the bushing and dust seals.

	Molybdenum Grease

2. Install:
   - Relay arm

	Relay Arm/Frame: **65 Nm (6.5 m•kg, 47 ft•lb)**

3. Install:
   - Arms
     (on swingarm)
   - Arm securing bolts

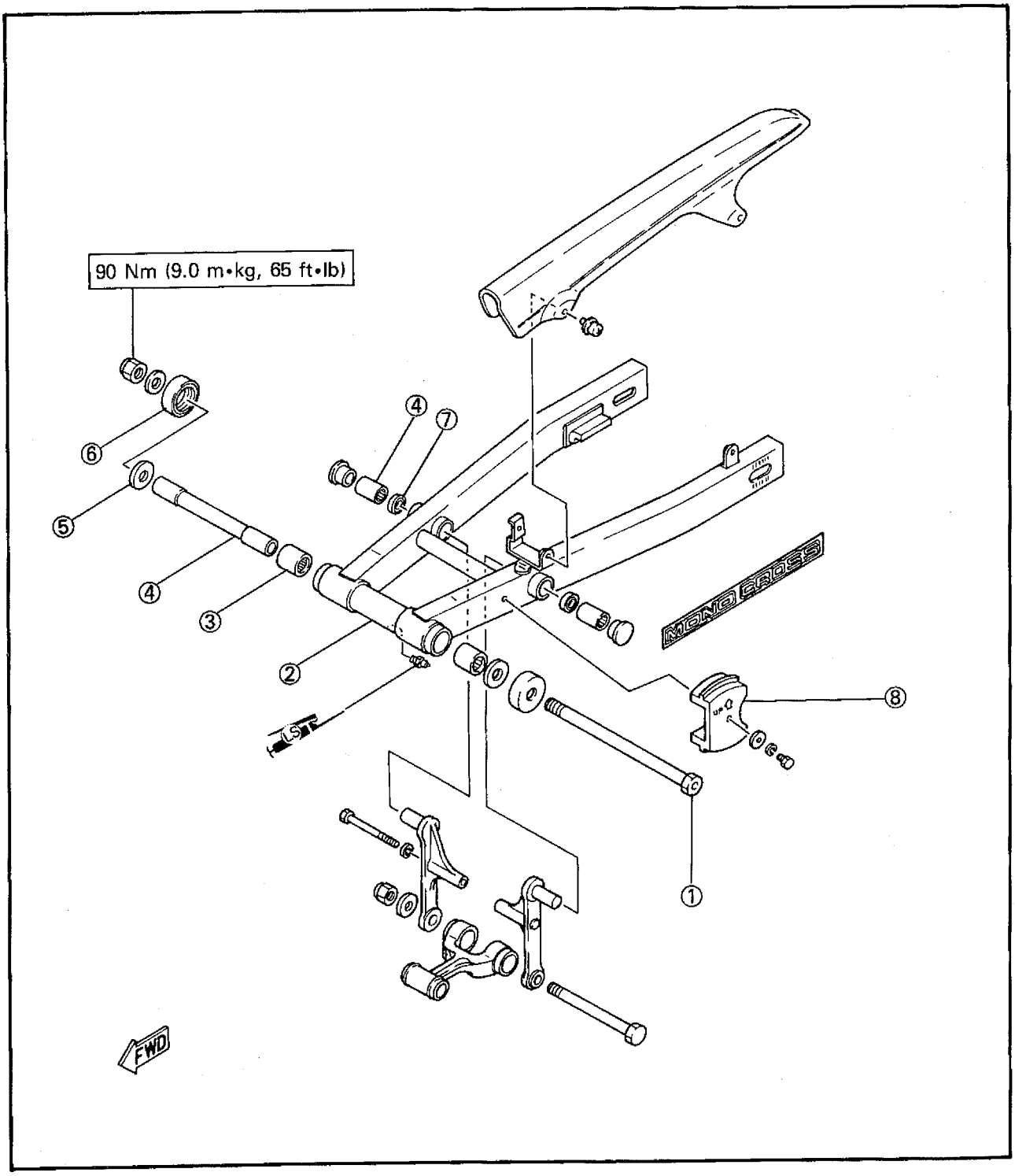
	20 Nm (2.0 m•kg, 14 ft•lb)

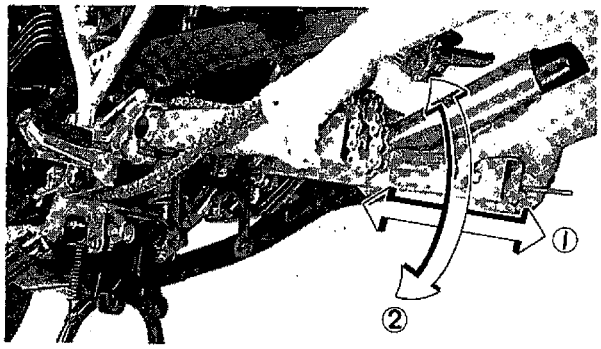
4. Install:
   - Rear shock absorber assembly

	Upper: **40 Nm (4.0 m•kg, 29 ft•lb)** **Lower:** **65 Nm (6.5 m•kg, 47 ft•lb)**

SWINGARM AND DRIVE CHAIN

① Pivot shaft
② Swingarm
③ Bearing
④ Bushing
⑤ Washer
⑥ Thrust cover
⑦ Oil seal
⑧ Guard seal

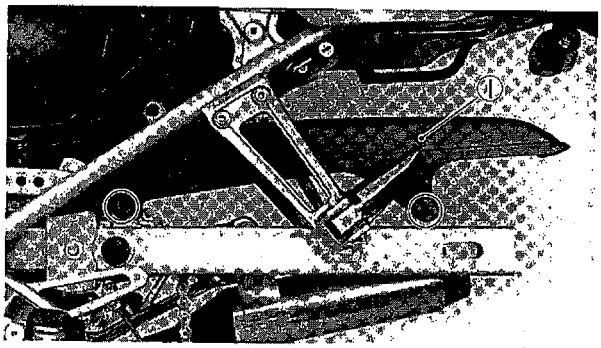




FREE PLAY INSPECTION

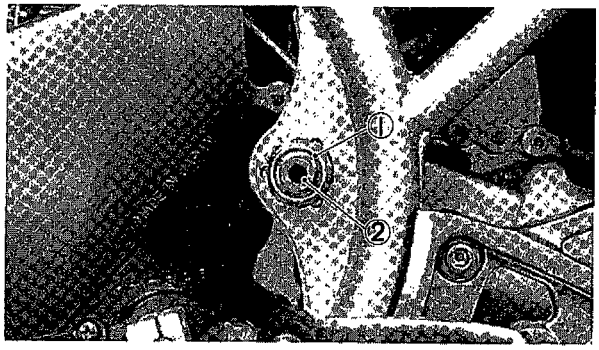
1. Check:
   - Swingarm side play ①
     Side play→Replace swingarm or bearing.
   - Swingarm up and down movement ②
     Tightness/Binding/Rough spots→Replace bearings.

Free Play Inspection Step:
- Remove the rear wheel.
- Remove the shock absorber lower securing bolt.
- Inspect swingarm side play by moving it frame side to side. (There should be no noticeable side play)
- Inspect swingarm up and down movement by moving it up and down.

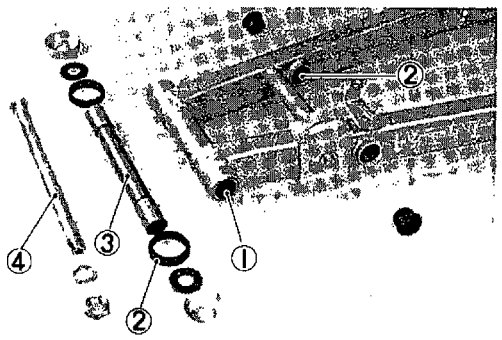


REMOVAL

1. Remove:
   - Rear wheel
   - Shock absorber lower securing bolt
   - Drive chain cover ①



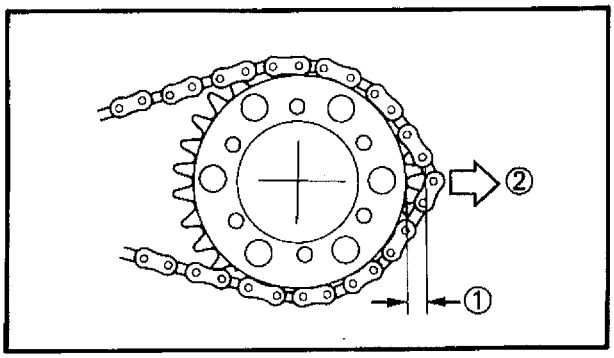
2. Remove:
   - Pivot shaft nut ①
   - Pivot shaft ②
   - Swingarm assembly
   - Arm 1 and 2
   - Drive sprocket cover
   - Drive chain



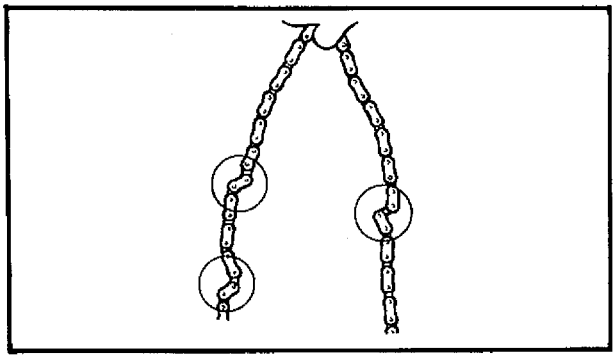
INSPECTION

1. Wash the bearings in a solvent.
2. Inspect:
   - Bearings ① (Race/Balls)
     Pitting/Damage→Replace.
   - Oil seal ②
     Damage→Replace.
   - Collar ③
   - Pivot shaft ④
     Damage→Replace.

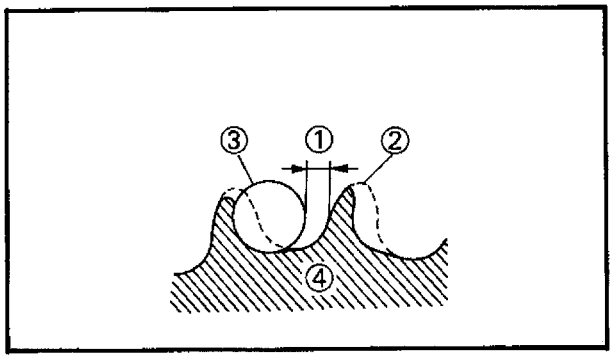
SWINGARM AND DRIVE CHAIN



3. Check:
   - Dirve chain wear
     Pull ② the chain away from the driven sprocket.
     Distance chain/sprocket higher than 1/2 tooth ①→Replace drive chain

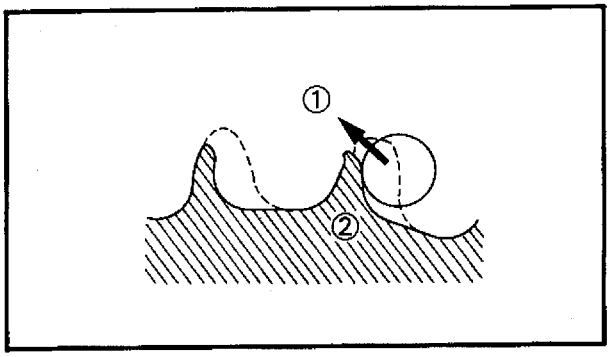


4. Check:
   - Drive chain stiffness
     Clean and oil the chain and hold as illustrated
     Stiff→Replace drive chain



5. Insepct:
   - Drive sprocket
     More than 1/4 teeth ① wear→Replace Sprocket.

② Correct
③ Roller
④ Sprocket



6. Inspect:
   - Drive Sprocket
     Bent teeth ②→Replace sprocket

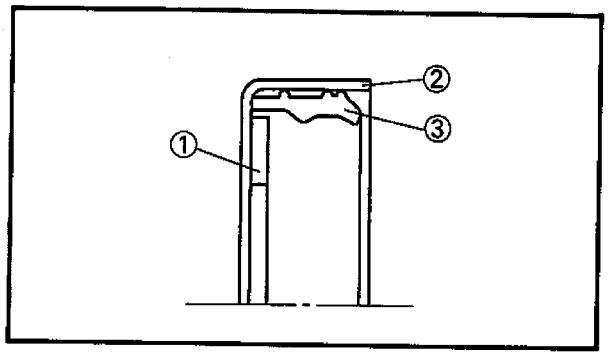
① Slip off

INSTALLATION

Reverse removal steps

1. Grease the bearings oil seal and collar.

Lithium Base Waterproof Wheel Bearing Grease



2. Install:
   - Washer ①
   - Oil seal ②
   (into the cover ③ as illustrated)
3. Install:
   - Arms
   (On swingarm)
   - Arm securing bolts

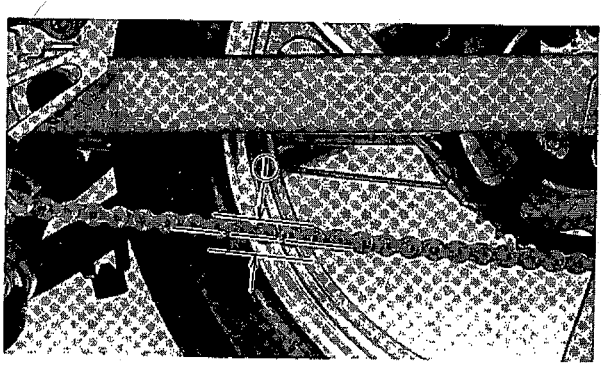
20 Nm (2.0 m•kg, 14 ft•lb)

4. Install:
   - Drive chain
   - Swingarm assembly

Swingarm Pivot Shaft:
90 Nm (9.0 m•kg, 65 ft•lb)

5. Install:
   - Shock absorber lower securing bolt

65 Nm (6.5 m•kg, 47 ft•lb)

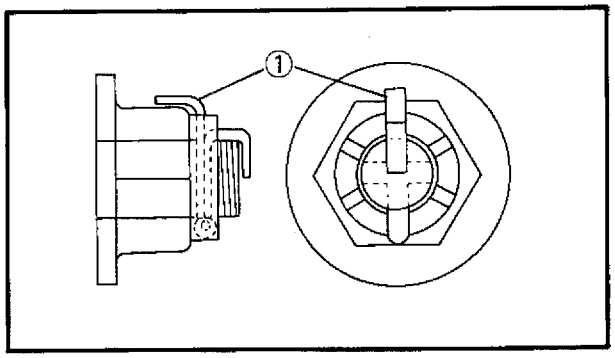


6. Install:
   - Rear wheel
7. Adjust:
   - Drive chain slack

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

8. Tighten:
   •Axle nut

	Axle Nut: **107 Nm (10.7 m•kg, 78 ft•lb)**



9. Install:
   •Cotter pin ① (New)

NOTE:
Do not loosen the axle nut after torque tightening. If the axle nut groove is not aligned with the wheel shaft cotter pin hole, align groove to hole by tightening up on the axle nut.

CABLES AND FITTINGS

CABLE MAINTENANCE

NOTE:
See "MAINTENANCE AND LUBRICATION" interval charts. Cable maintenance is primarily concerned with preventing deterioration and providing proper lubrication to allow the cable to move freely within its housing. Cable removal is straightforward and uncomplicated. Removal is not discussed within this section.

WARNING:
Cable routing is very important. For details of cable routing, see the "CABLE ROUTING" at the end of this manual. Improperly routed or adjusted cables may make the motorcycle unsafe for operation.

1. Remove:
   - Throttle cables
   - Tachometer cable
   - Speedometer cable
2. Check:
   - Cable free movement

   Obstruction→Inspect for wear/Damage.
   Kinking/Frayed strands/Damage→Replace.
3. Lubricate the cable.

Cable lubrication steps:
- Hold the cable in a vertical position.
- Apply lubricant to the uppermost end of the cable.
- Maintain its vertical position until the oil flows to the bottom.
- Allow excess oil to drain, then reinstall the cable.

NOTE:

Choice of lubricant depends upon conditions and preferences. The use of a semi-drying chain and cable lubricant will perform adequately under most conditions.



Recommended Lubricant:
SAE 10W30 motor oil

4. Install:
   - Cables

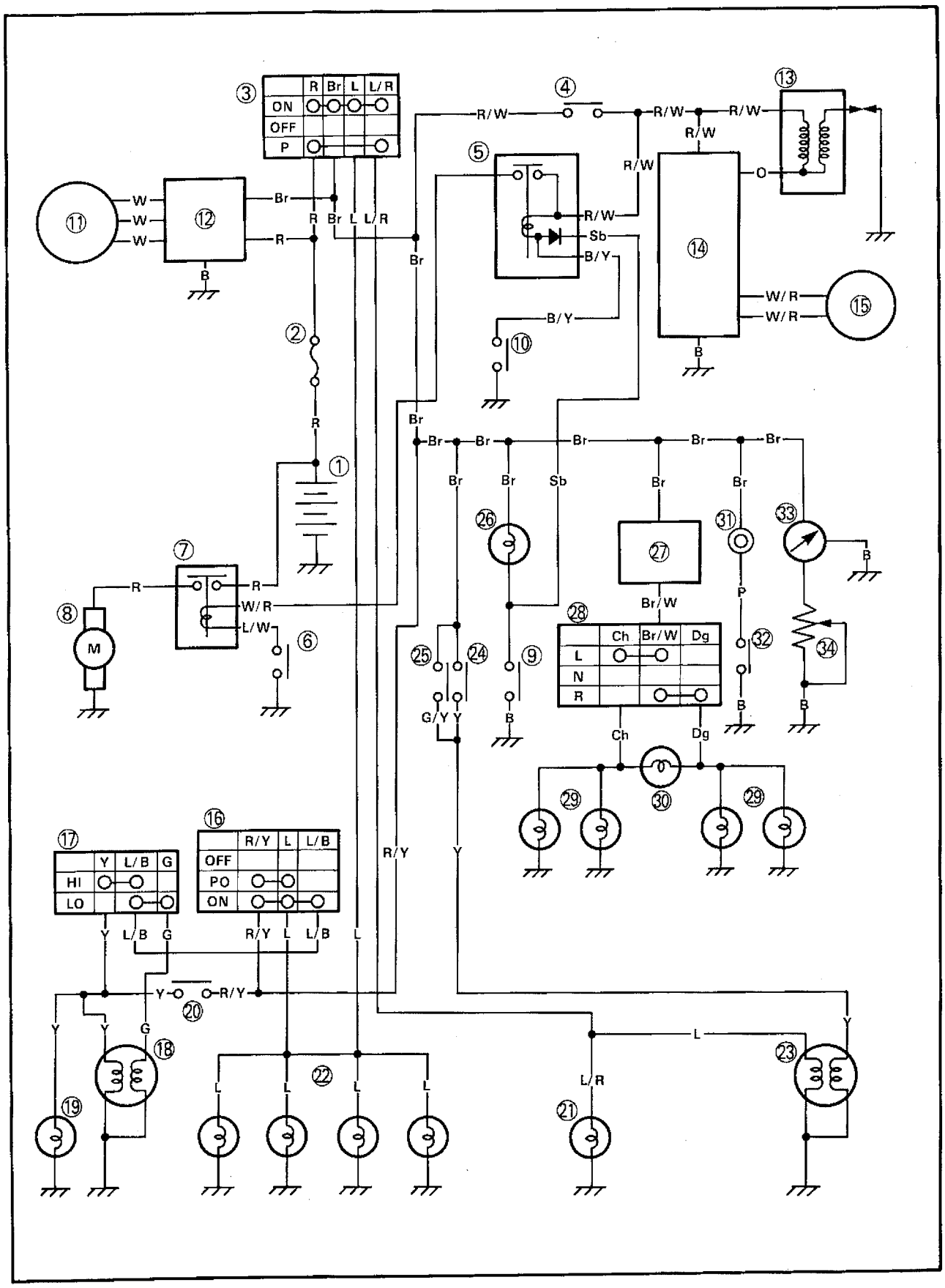
   Reverse the removal procedure.

CHAPTER 6
ELECTRICAL

SRX250 CIRCUIT DIAGRAM 6-1
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ELECTRICAL

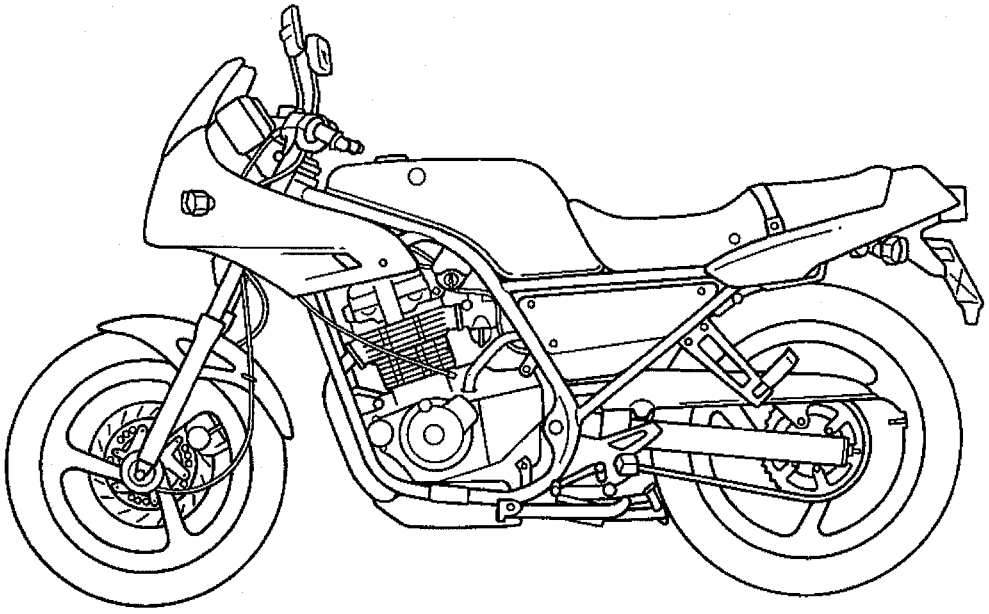
SRX250 CIRCUIT DIAGRAM



① Battery
② Main fuse
③ Main switch
④ Engine stop switch
⑤ Starting circuit cut-off relay
⑥ Starter switch
⑦ Starter relay
⑧ Starter motor
⑨ Neutral switch
⑩ Clutch switch
⑪ A.C. Magneto
⑫ Rectifier/Regulator
⑬ Ignition coil
⑭ Ignitor unit
⑮ Pick up coil
⑯ "LIGHT" switch
⑰ Dimmer switch
⑱ Headlight
⑲ High beam indicator
⑳ "PASSING" switch
㉑ Marker light
㉒ Meter lights
㉓ Tail/brake light
㉔ Rear brake switch
㉕ Front brake switch
㉖ Neutral indicator
㉗ Flasher relay
㉘ "TURN" switch
㉙ Flasher lights
㉚ Flasher indicator light
㉛ Horn
㉜ Horn switch
㉝ Fuel meter
㉞ Fuel level sender

COLOR CODE

L	Blue
R	Red
G	Green
Br	Brown
B	Black
Ch	Chocolate
Y	Yellow
P	Pink
W	White
O	Orange
Dg	Dark green
Sb	Skyblue
W/R	White/Red
Br/W	Brown/White
L/W	Blue/White
L/B	Blue/Black
G/Y	Green/Yellow
R/W	Red/White
L/R	Blue/Red
B/Y	Black/Yellow
R/Y	Red/Yellow

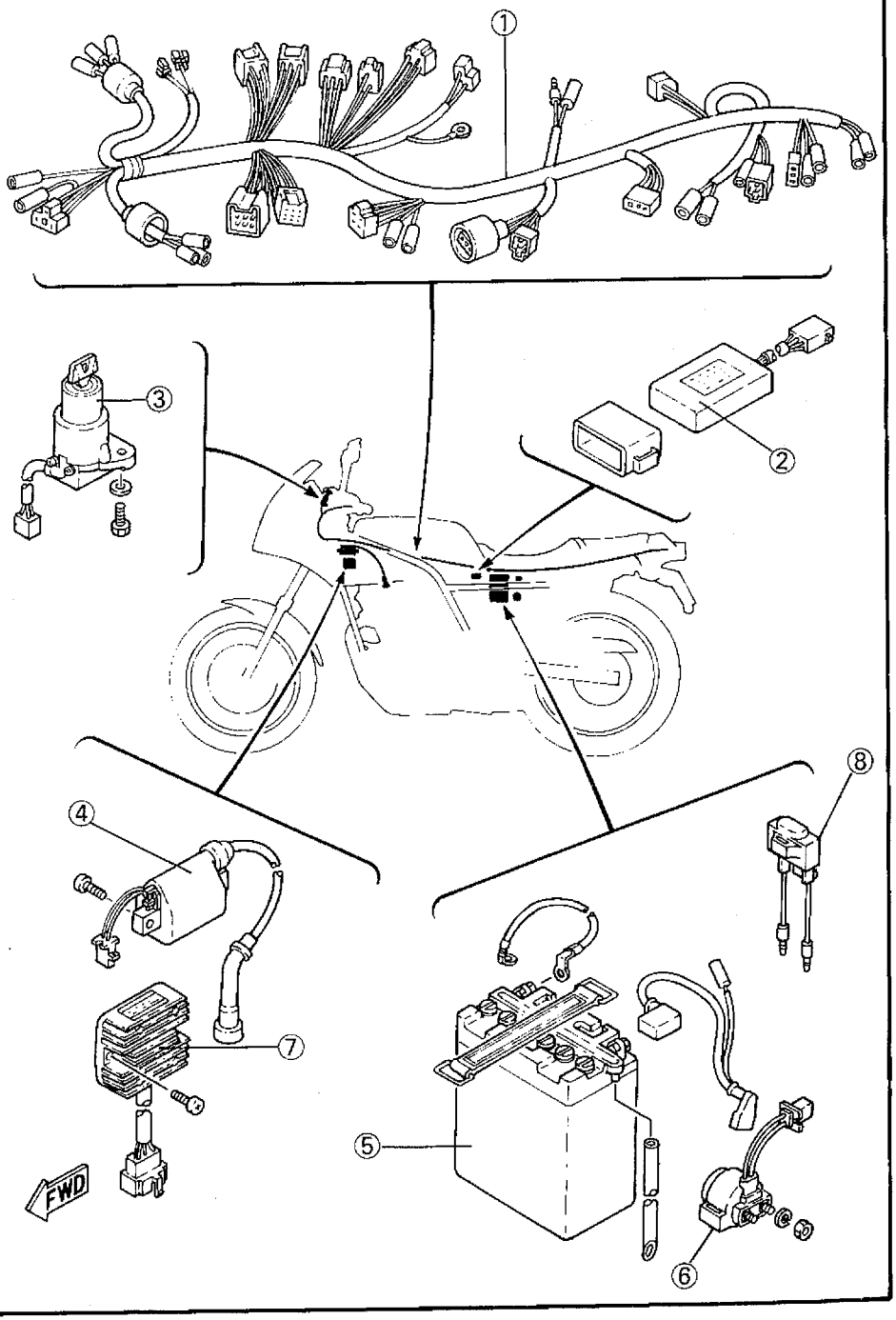


ELECTRICAL COMPONENTS 1

① Wire harness
② Ignitor unit
③ Main switch
④ Ignition coil
⑤ Battery
⑥ Starter relay
⑦ Rectifier/Regulator
⑧ Main fuse

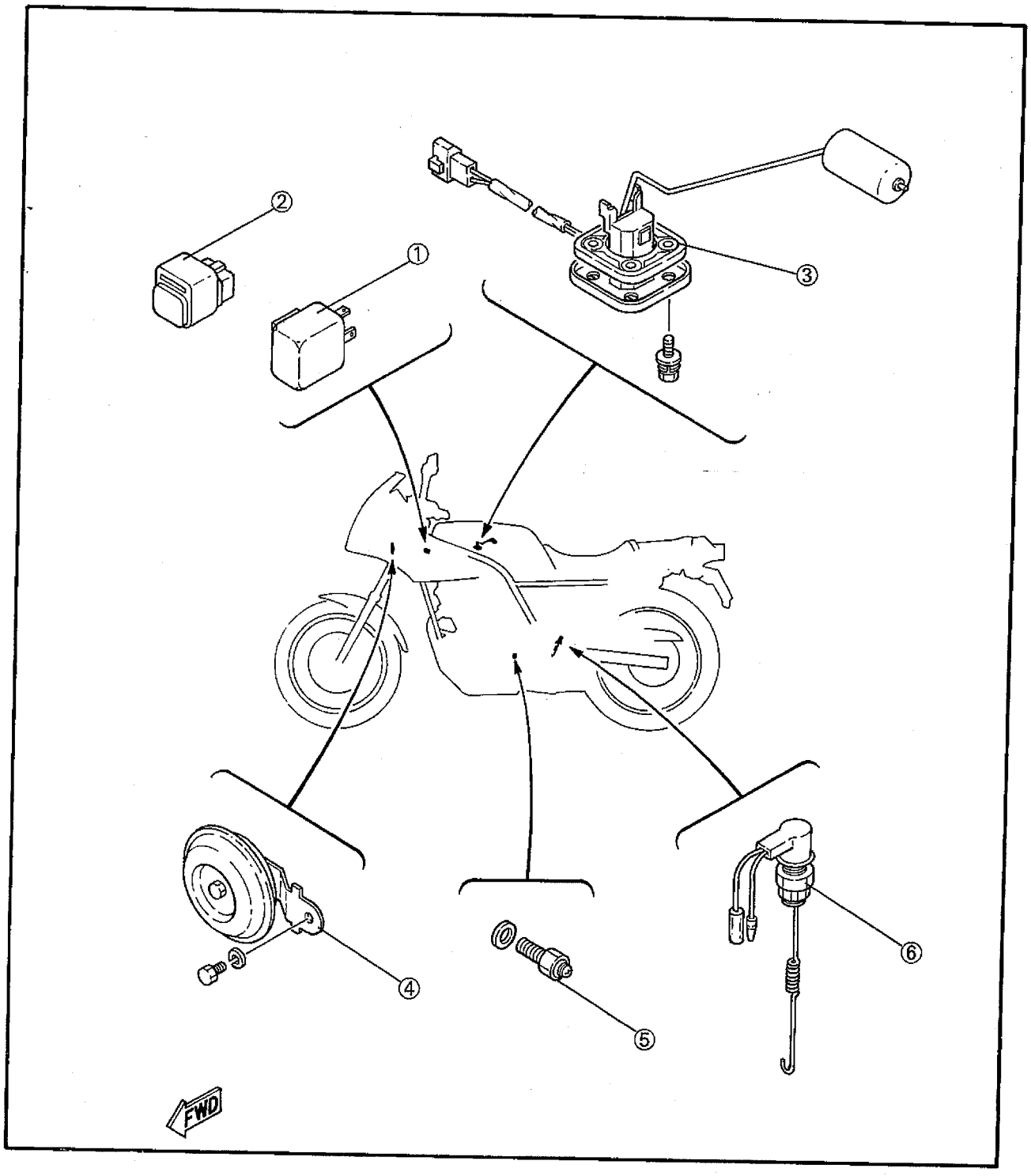
A	IGNITION COIL:
B	PRIMARY WINDING RESISTANCE: 2.7Ω ± 10% at 20°C (68°F)
C	SECONDARY WINDING RESISTANCE: 13.2kΩ ± 20% at 20°C (68°F)
D	BATTERY
E	CAPACITY: 12V 12AH
F	SPECIFIC GRAVITY: 1.280

G	COIL WINDING RESISTANCE:
H	FULL: 10Ω ± 10% at 20°C (68°F)
I	EMPTY: 90Ω ± 15% at 20°C (68°F)



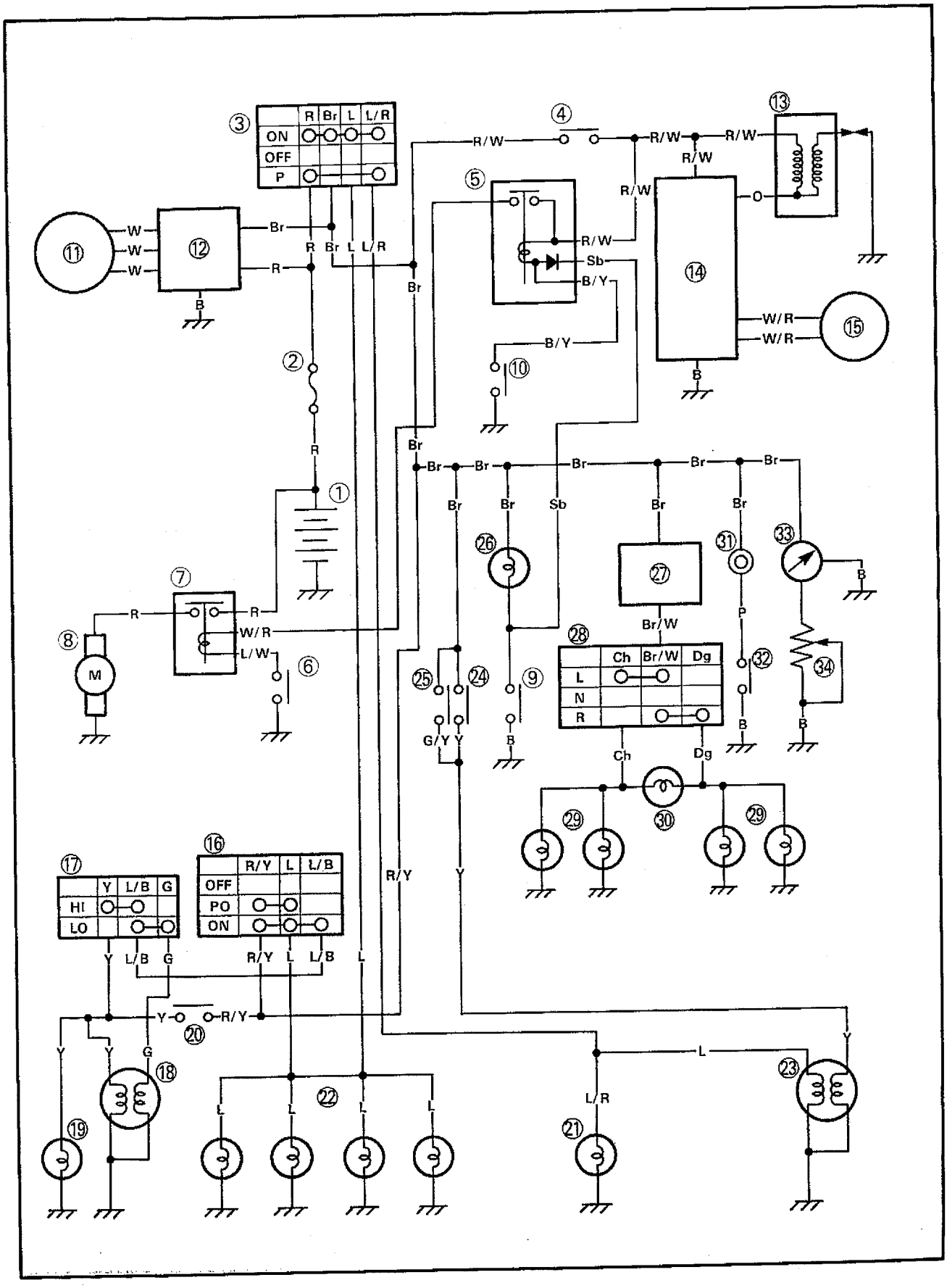
ELECTRICAL COMPONENTS 2

① Flasher relay
② Starting circuit cut-off relay
③ Fuel level sensor
④ Horn
⑤ Neutral switch
⑥ Rear brake switch



ELECTRIC STARTING SYSTEM

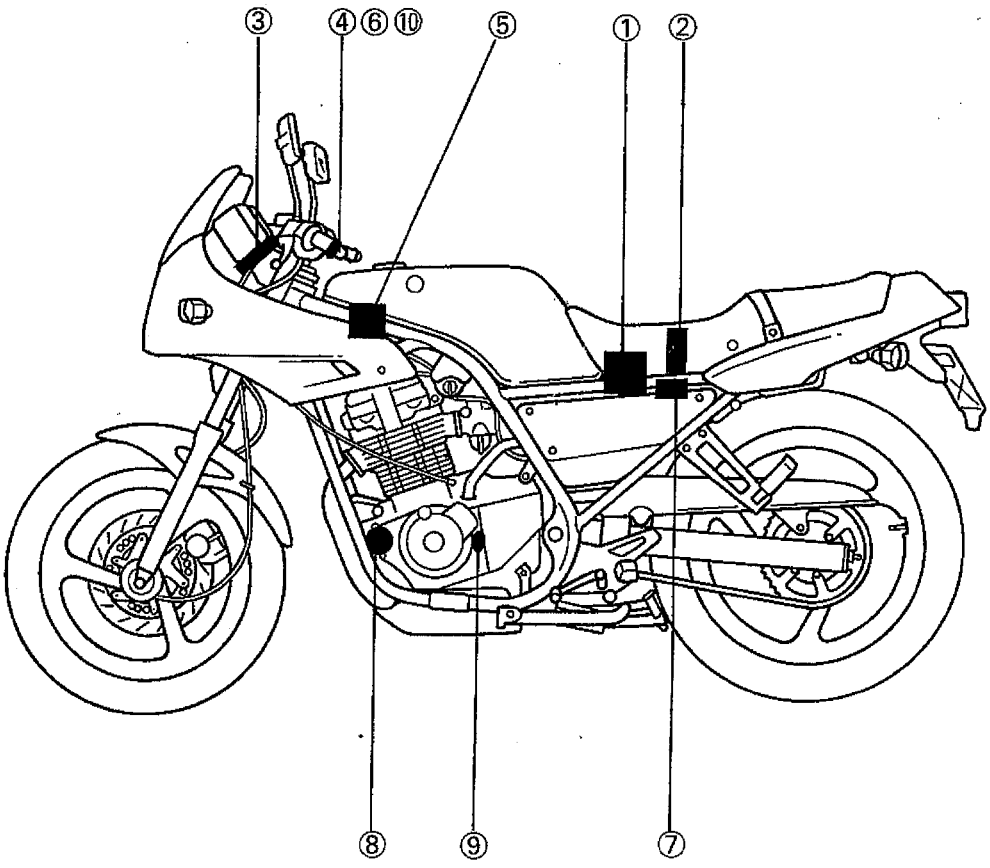
Below circuit diagram shows starter circuit



① **Battery**
② **Main fuse**
③ **Main switch**
④ **Engine stop switch**
⑤ **Starting circuit cut-off relay**
⑥ **Starter switch**
⑦ **Starter relay**
⑧ **Starter motor**
⑨ **Neutral switch**
⑩ **Clutch switch**
⑪ A.C. Magneto
⑫ Rectifier/Regulator
⑬ Ignition coil
⑭ Ignitor unit
⑮ Pick up coil
⑯ "LIGHT" switch
⑰ Dimmer switch
⑱ Headlight
⑲ High beam indicator
⑳ "PASSING" switch
㉑ Marker light
㉒ Meter lights
㉓ Tail/brake light
㉔ Rear brake switch
㉕ Front brake switch
㉖ Neutral indicator light
㉗ Flasher relay
㉘ "TURN" switch
㉙ Flasher lights
㉚ Flasher indicator light
㉛ Horn
㉜ Horn switch
㉝ Fuel meter
㉞ Fuel level sender

COLOR CODE

L	Blue
R	Red
G	Green
Br	Brown
B	Black
Ch	Chocolate
Y	Yellow
P	Pink
W	White
O	Orange
Dg	Dark green
Sb	Sky blue
Lg	Light green
W/R	White/Red
Br/W	Brown/White
L/W	Blue/White
L/B	Blue/Black
G/Y	Green/Yellow
R/W	Red/White
L/R	Blue/Red
B/Y	Black/Yellow
R/Y	Red/Yellow



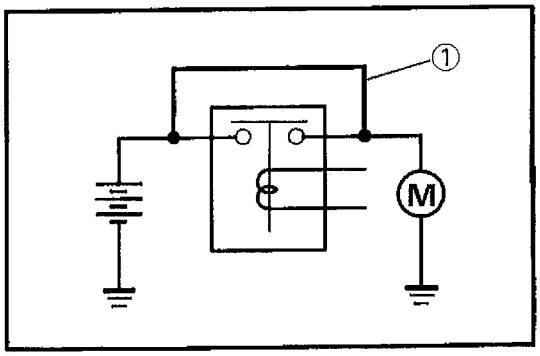
ELECTRIC STARTING SYSTEM

TROUBLESHOOTING CHART

THE STARTER MOTOR DOES NOT OPERATE

A

1. Remove:
   - Left side cover
2. Connect:
   - Stater relay terminals
     (Battery side and starter motor side)



① Jamper lead

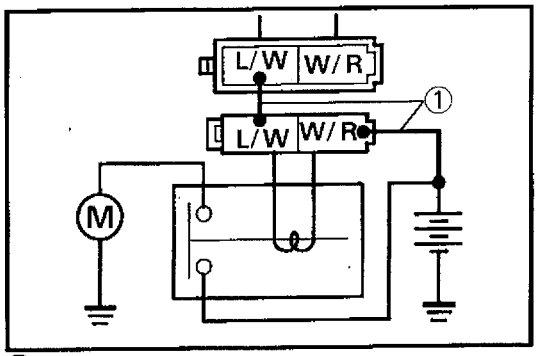
3. Check:
   - Starter motor operation

No → Check battery
- No → Replace and/or Charge battery
- OK → Repair and/or replace Starter motor

OK

B

1. Disconnect:
   - Starter relay coupler
2. Connect:
   - Starter relay coupler terminals



① Jamper lead

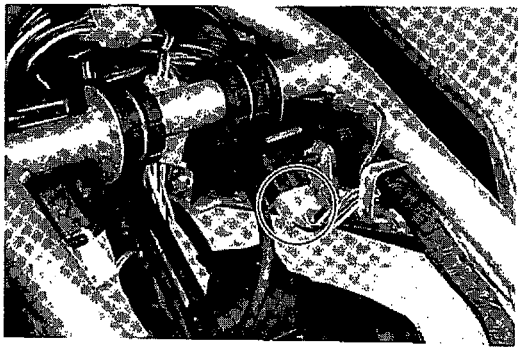
3. Check:
   - Starter motor operation
     Push the starter switch

No → Check starter switch
- No → Replace
- OK → Replace starter relay

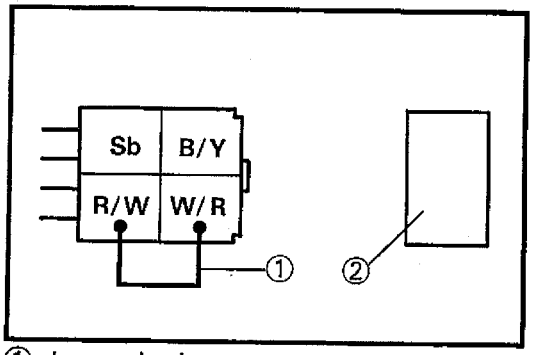
OK

C.

1. Remove:
   - Seat
   - Fuel tank
2. Disconnect:
   - Starting circuit cut off relay coupler



3. Connect:
   - Starting circuit cut off relay coupler terminal



① Jamper lead
② Starting circuit cut off relay

4. Check:
   - Starter motor operation
     Turn the main switch to "ON"
     Push the starter switch

OK → Check clutch and neutral switch

Check clutch and neutral switch:
- No → Replace
- OK → Replace starting circuit cut off relay

No → Correct connection

ELECTRIC STARTING SYSTEM

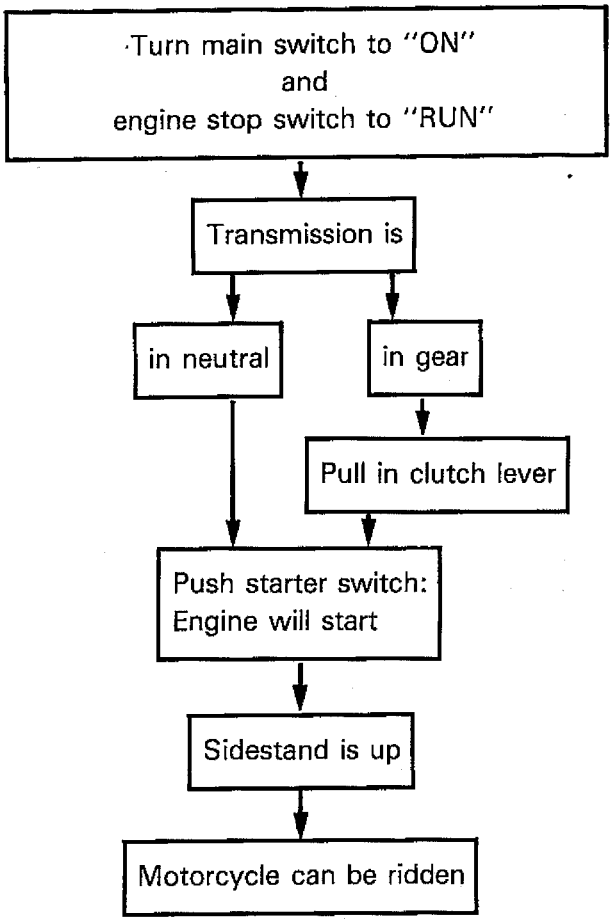
STARTING CIRCUIT CUT-OFF SYSTEM

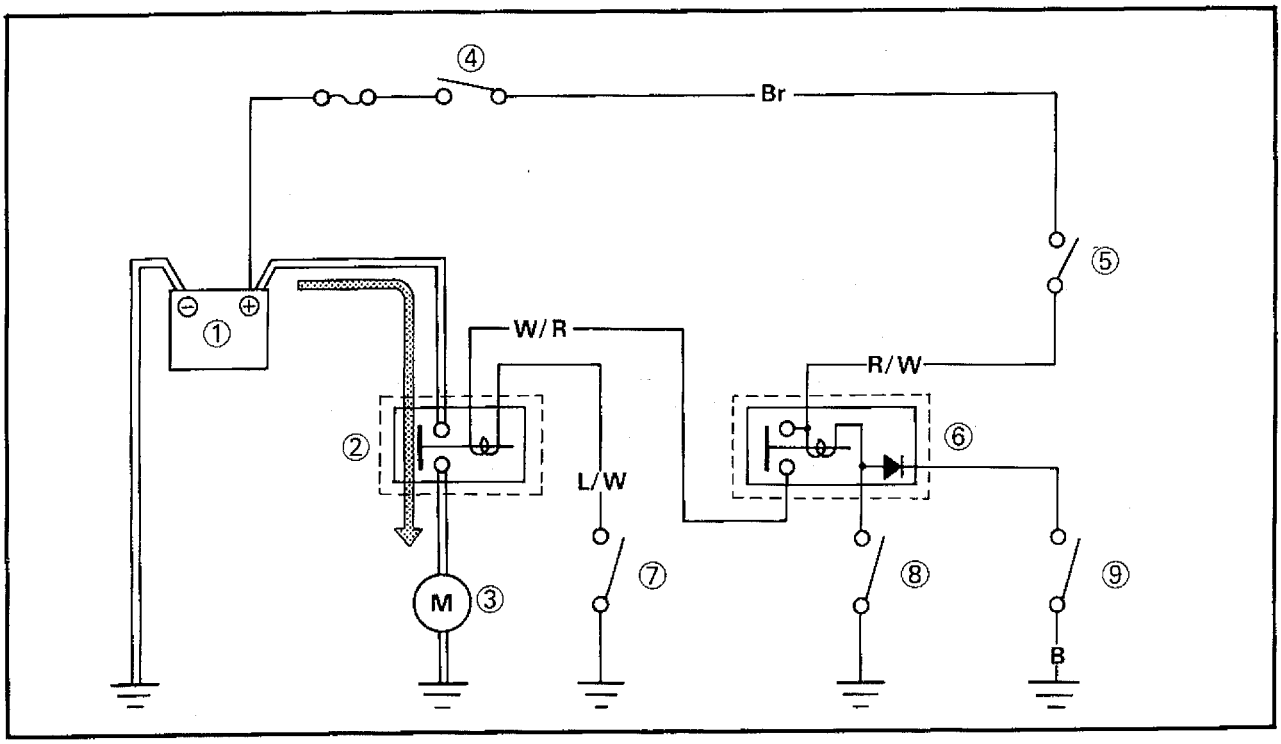
The starting circuit on this model consists of the starter motor, starter relay,starting circuit cutoff relay, clutch switch and neutral switch. If the engine stop switch and the main switch are both on, the starter motor can operate only if:

- The transmission is in neutral (the neutral switch is on)

and

- The clutch lever is pulled in (the clutch switch is on)

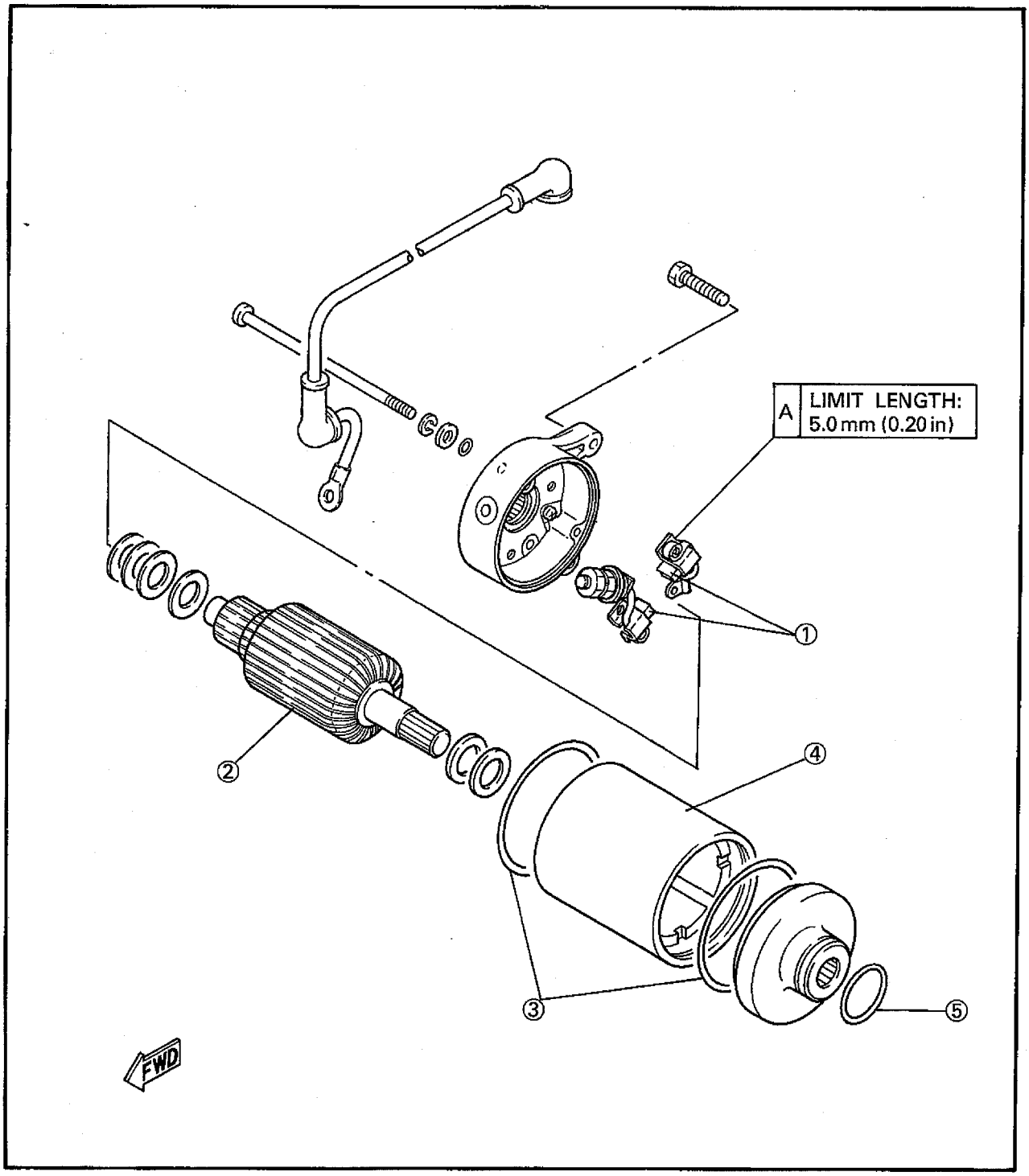




① Battery
② Starter relay
③ Starter motor
④ Main switch
⑤ Engine stop switch
⑥ Starting circuit cut-off relay
⑦ Starter switch
⑧ Clutch switch
⑨ Neutral switch

STARTER MOTOR

① Brush
② Armature
③ Gasket
④ Stator
⑤ O-ring

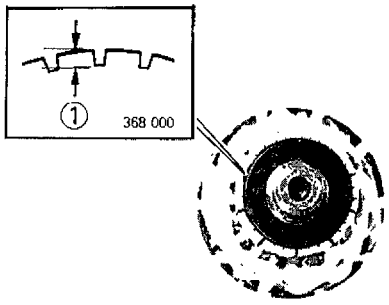


Inspection and Repair

Amature coil inspection

1. Inspect:
   - Commutator (Outer surface)
     Dirty→Clean with #600 grit sandpaper.
2. Measure:
   - Mica (Insulation depth)
     (between commutator segments)
     Out of specification→Scrape mica to proper limits.

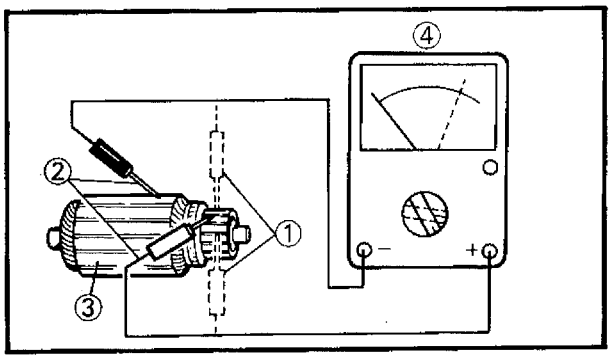
Use a hacksaw blade that is ground to fit.



Depth of Insulator ①:
1.8 mm (0.07 in)

NOTE:

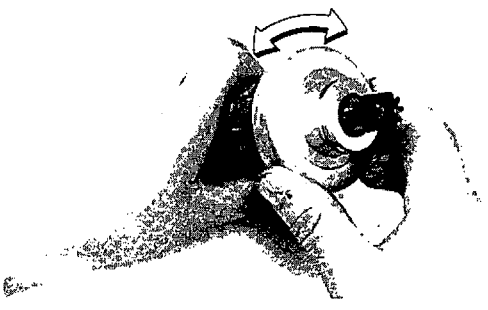
The mica insulation of the commutator must be undercut to ensure proper operation of the commutator.



3. Measure:
   - Armature coil (Insulation/Continuity)
     Defect(s)→Replace starter motor.

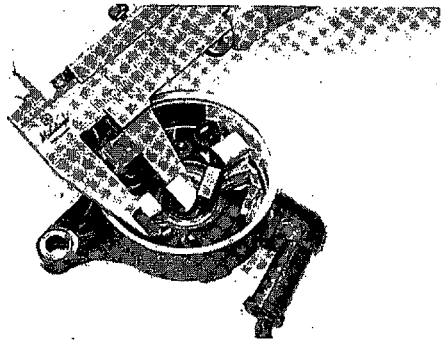
Armature coil:
0.014Ω ± 10% at 20°C (68°F)

① Continuity check
② Insulation check
③ Armature coil



Bearing, and O-ring Inspection

1. Inspect:
   - Bearing
     Wear/Damage→Replace.
   - O-ring
     Wear/Damage→Replace.



Brush Inspection

1. Measure:
   - Brush length (Each)
     Out of specification → Replace.

Minimum Brush Length: 5.0 mm (0.20 in)

2. Inspect:
   - Brush spring:
     Compare with new spring.
     Weaker/Damage → Replace.

BATTERY



CAUTION:

To insure maximum battery performance be sure to:

- **Charge a new battery before use.**
- **Maintain proper electrolyte level.**
- **Charge at proper current; 1.2 amps/10 hrs. or until the specific gravity reaches 1.280 at 20°C (68°F).**

Failure to observe these points will result in a shortened battery life.

WARNING:

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

Always follow these preventive measures:

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

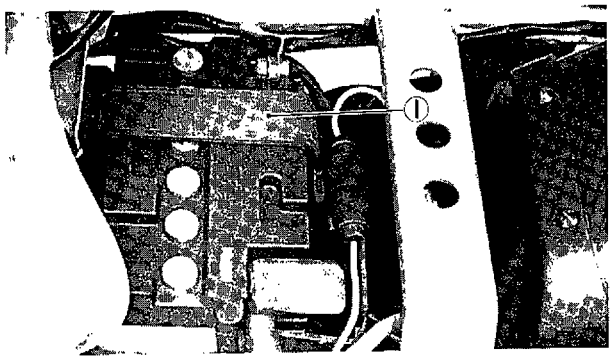
Antidote (EXTERNAL):

- **SKIN-Flush with water.**
- **EYES-Flush with water for 15 minutes and get immediate medical attention.**
- **Drink large quantities of water or milk and follow with milk of magnesia, beaten egg, or vegetable oil.**

Get immediate medical attention.

Batteries also generate explosive hydrogen gas, therefore you should always follow these preventive measures:
- **Charge batteries in a well-ventilated area.**
- **Keep batteries away from fire, sparks, or open flames (e.g., welding equipment, lighted cigarettes, etc.)**
- **DO NOT SMOKE when charging or handling batteries.**

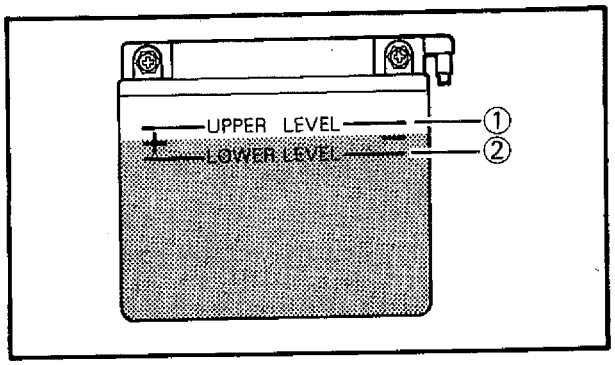
KEEP BATTERIES AND ELECTROLYTE OUT OF REACH OF CHILDREN:



Inspection

1. Remove:
   - Seat
   - Battery band ①
   - Battery

   Disconnect negative lead first.



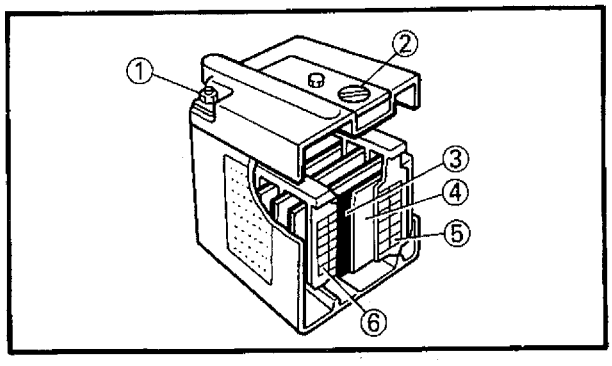
2. Inspect:
   - Battery fluid level

   Below lower level→Add distilled water.

① Upper level
② Lower level

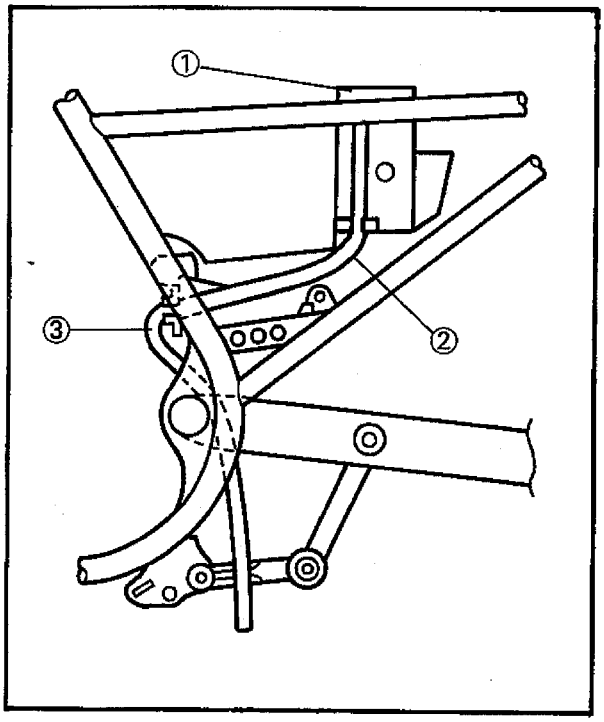
NOTE:

Replace the battery if:
- Battery voltage will not rise to a specific value or bubbles fail to rise even after many hours of charging.
- Sulfation of one or more cells occurs, as indicated by the plates turning white, or an accumulation of material exists in the bottom of the cell.
- Specific gravity readings after a long, slow charge indicate one cell to be lower than the rest.
- Warpage or buckling of plates or insulators is evident.



① Terminal
② Cap
③ Insulator
④ Separation plate
⑤ Negative electrode
⑥ Positive electrode

3. Measure:
   • Specific gravity:
   Less than 1.280→Recharge battery.
4. Install:
   • Battery
   Connect positive lead first.



5. Check:
   • Breather hose
   Improper routing→Correct.
   Obstruction/Damage→Replace.

① Battery
② Through the guide
③ Through the clamp

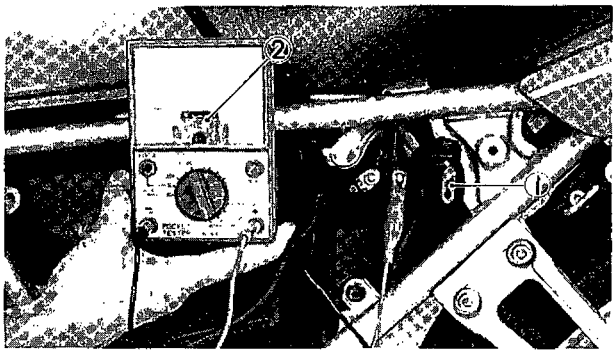
Battery Storage

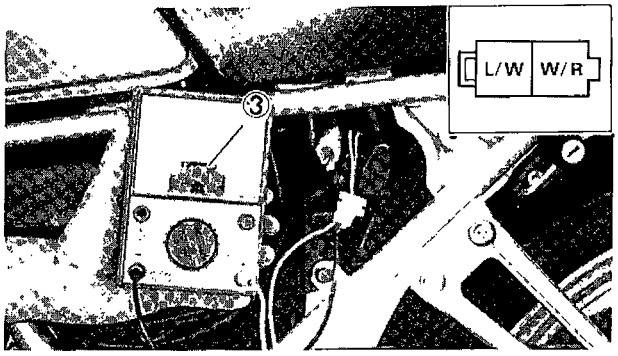
The battery should be stored if the vehicle is not to be used for a long period.

1. Remove:
   • Battery

Battery storage and maintenance tips:
- Recharge the battery periodically.
- Store the battery in a cool, dry place.
- Recharge the battery before reinstalling.

Battery	12N 12A-4A
Electrolyte	Specific gravity: 1.280
Initial charging Rate	1.2 Amp for 10 hours (new battery)
Recharging rate	10 hours (or until specific gravity reaches 1.280)
Refill fluid	Distilled water (to maximum level line)
Refill period	Check once per month (or more often as required)



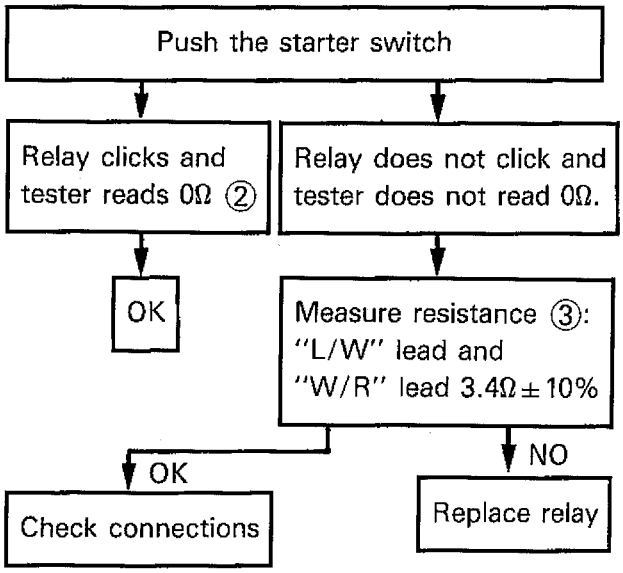


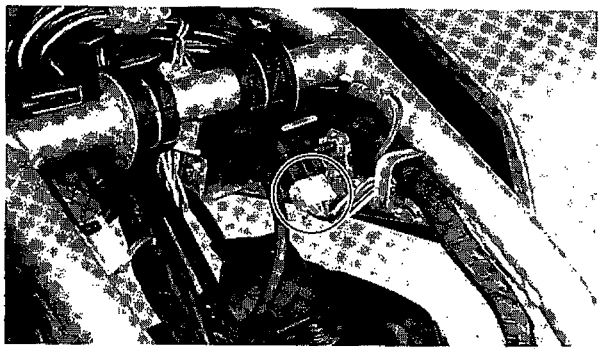
STARTER RELAY

Inspection

1. Remove:
   - Left side cover
2. Disconnect:
   - Starter relay lead (Battery side) ①
3. Connect:
   - Pocket Tester (90890-03104) to starter relay terminal

Preparation steps:
- Turn main switch to "ON"
- Turn engine stop switch to "RUN"
- Apply clutch lever or shift to neutral

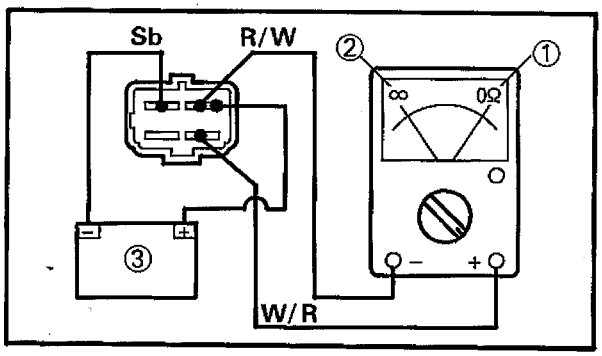




STARTING CIRCUIT CUT-OFF RELAY

Inspection

1. Remove:
   - Seat
   - Fuel tank
   - Starting circuit cut-off relay

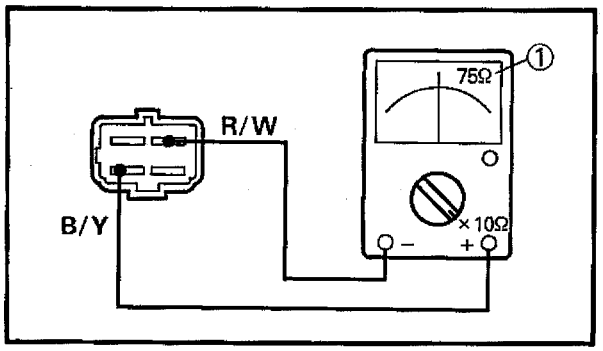


2. Check:
   - Relay contacts

   Use 12V battery ③ and Pocket Tester (90890-03104)

   Out of specification→Replace relay.

	Battery Connected ①: 0Ω **Battery Disconnected ②: ∞**

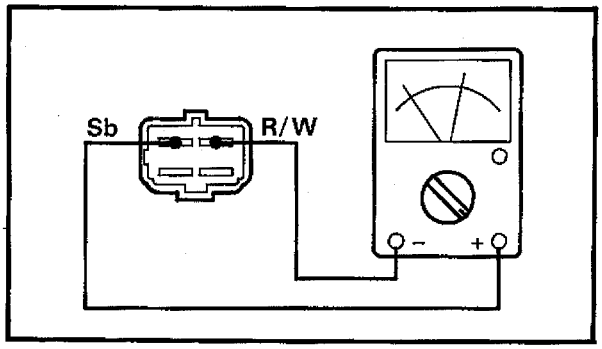


3. Check:
   - Relay coil resistance ①

   Use the Pocket Tester (90890-03104).

   Out of specification→Replace.

	75Ω ± 10% at 20°C (68°F) **(R/W – B/Y)**



4. Check:
   - Diode

   Difective element→Replace cut off relay

Checking element	Pocket tester connecting point		Good
	(+) (Red)	(–) (Black)	
Diode	Sb	R/W	○
	R/W	Sb	×

○: Continuity
×: Discontinuity (∞)

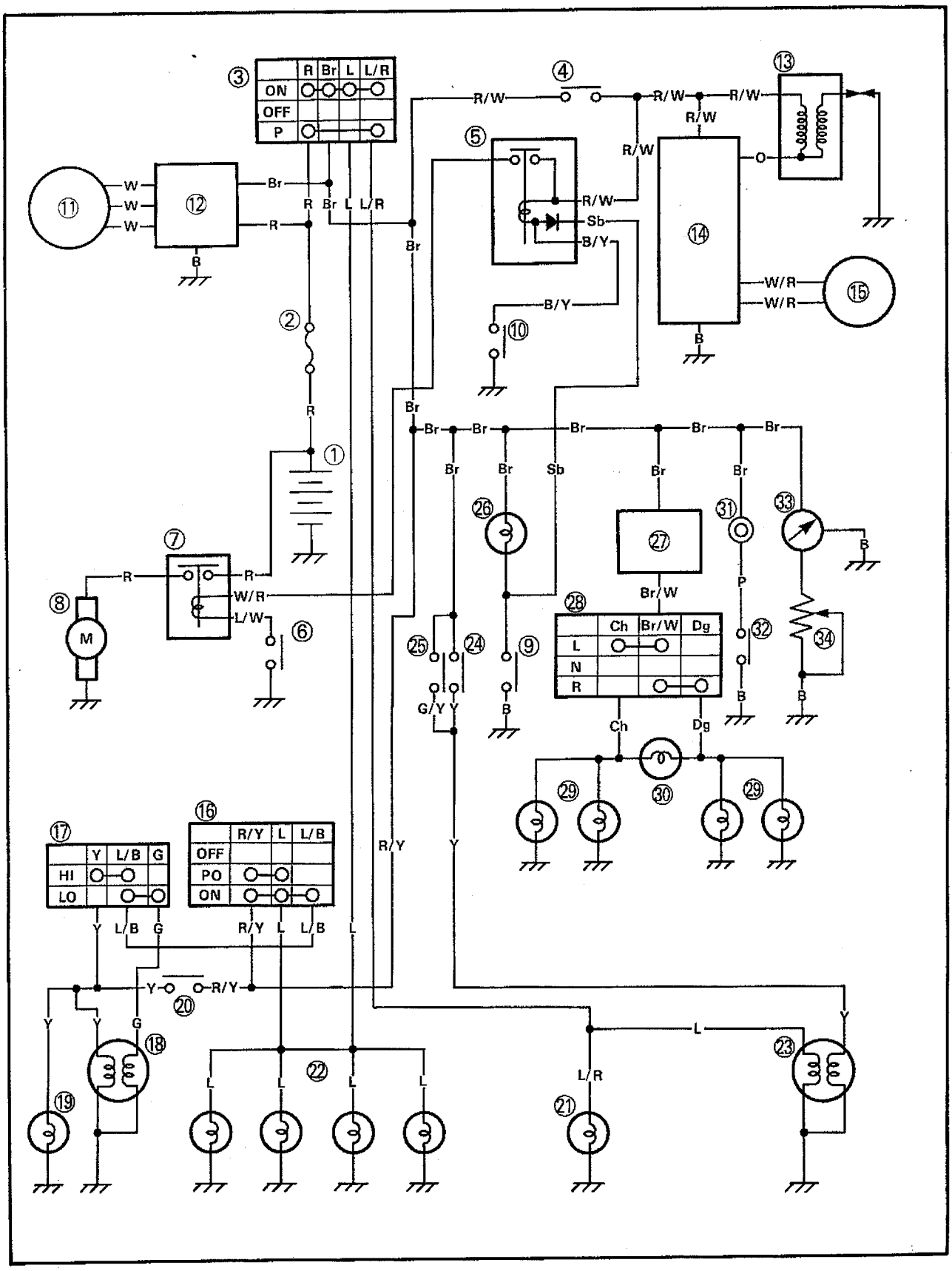
NOTE:

The results of "○" and "×" should be reversed according to the polarity of the specific pocket tester used.

CHARGING SYSTEM

Circuit Diagram

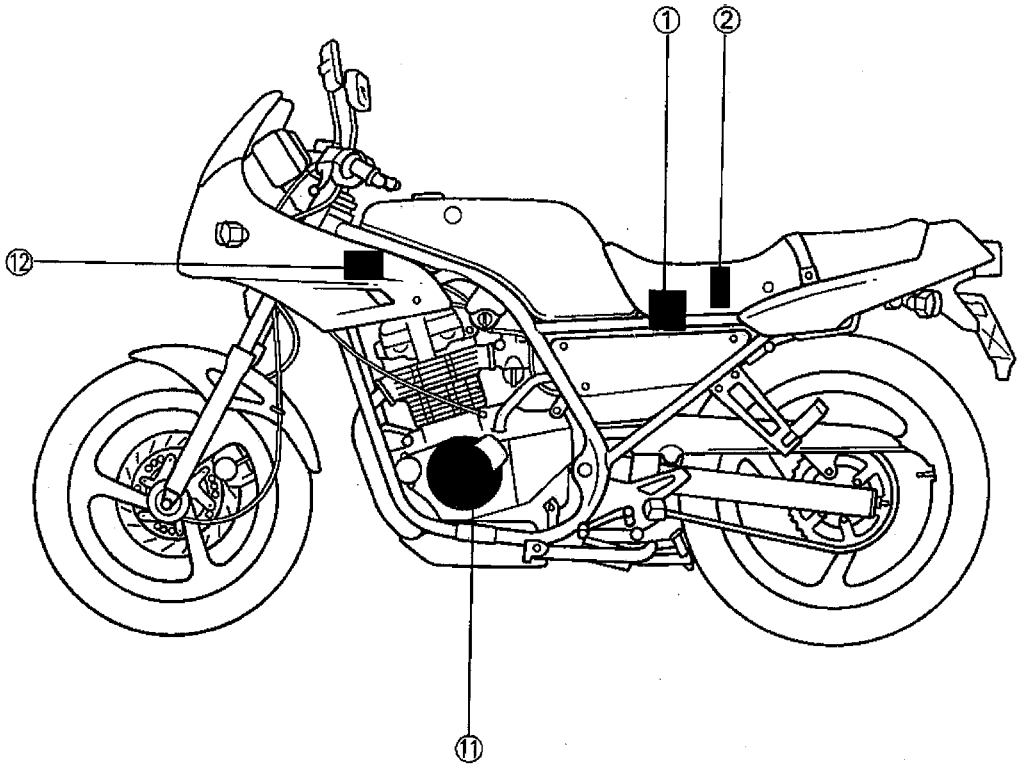
Below circuit diagram shows charging circuit



① **Battery**
② **Main fuse**
③ Main switch
④ Engine stop switch
⑤ Starting circuit cut-off relay
⑥ Starter switch
⑦ Starter relay
⑧ Starter motor
⑨ Neutral switch
⑩ Clutch switch
⑪ **A.C. Magneto**
⑫ **Rectifier/Regulator**
⑬ Ignition coil
⑭ Ignitor unit
⑮ Pick up coil
⑯ "LIGHT" switch
⑰ Dimmer switch
⑱ Headlight
⑲ High beam indicator
⑳ "PASSING" switch
㉑ Marker light
㉒ Meter lights
㉓ Tail/brake light
㉔ Rear brake switch
㉕ Front brake switch
㉖ Neutral indicator light
㉗ Flasher relay
㉘ "TURN" switch
㉙ Flasher lights
㉚ Flasher indicator light
㉛ Horn
㉜ Horn switch
㉝ Fuel meter
㉞ Fuel level sender

COLOR CODE

L	Blue
R	Red
G	Green
Br	Brown
B	Black
Ch	Chocolate
Y	Yellow
P	Pink
W	White
O	Orange
Dg	Dark green
Sb	Sky blue
Lg	Light green
W/R	White/Red
Br/W	Brown/White
L/W	Blue/White
L/B	Blue/Black
G/Y	Green/Yellow
R/W	Red/White
L/R	Blue/Red
B/Y	Black/Yellow
R/Y	Red/Yellow



CHARGING SYSTEM

TROUBLESHOOTING CHART

THE BATTERY IS NOT CHARGED

A

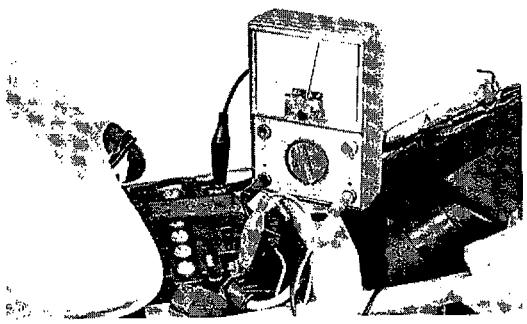
1. Remove:
   - Seat
2. Connect:
   - Pocket Tester
     to the battery terminals
3. Measure:
   - Battery voltage (12V)
   - Battery gravity (1.280)

NO → • Check the battery
• Replace and/or charge battery

OK

B

1. Start the engine and accelerate to about 2000 r/m or more.
2. Measure:
   - Generator voltage
     (14 – 15V)



More than 15V → • Remove fuel tank
• Check the rectifier/regulator
• Replace if necessary

Less than 14V

C

1. Check:
   - Main fuse

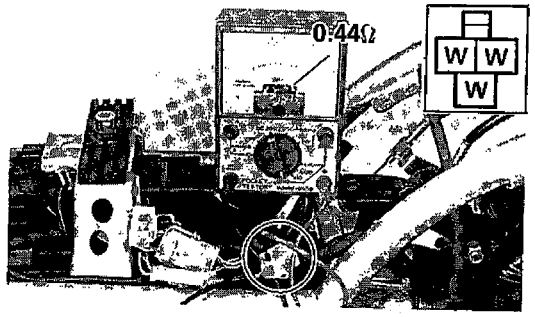
faulty → Replace

OK

OK

D

1. Remove:
   • Fuel tank
2. Disconnect:
   • Stator coil coupler
3. Measure:
   • Stator coil resistance (W-W)
   0.44Ω ± 15%

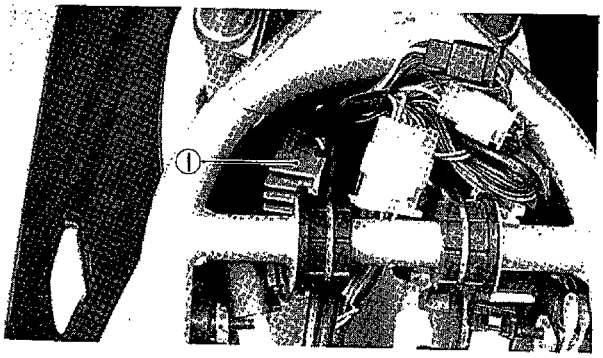


OK → Correct connection

NO → Replace stator coil

CHARGING VOLTAGE INSPECTION

1. Connect:
   • Pocket Tester (90890-03104)
   (to battery terminals)
2. Start the engine and accelerate to about 2,000 rpm or more.
3. Measure:
   • Generator voltage

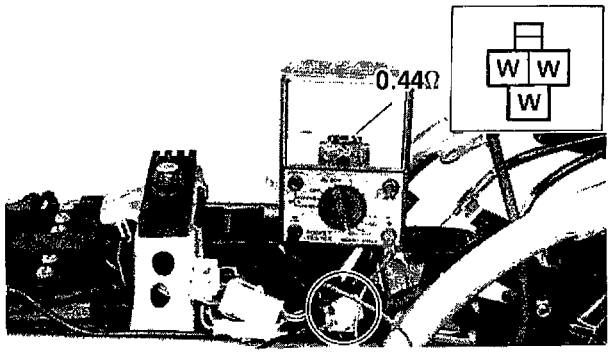


Generator Voltage: 14 – 15V

Out of specification → Check battery, stator coil, rectifier/regulator ①.
Replace faulty parts.

CAUTION:

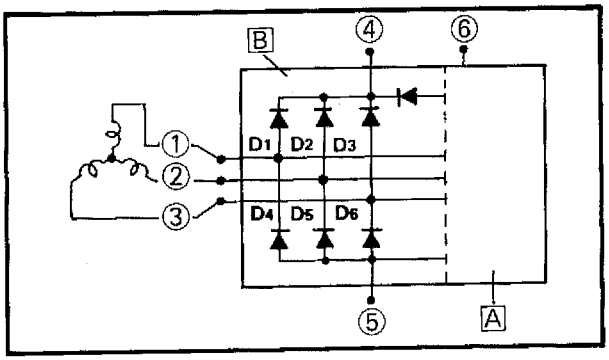
Never disconnect the wires from the battery while the generator is operating, otherwise the voltage across the generator terminals will increase and damage the semi-conductors.



STATOR COIL

1. Remove:
   - Seat
   - Fuel tank
2. Measure:
   - Stator coil resistance
     Out of specification → Replace.

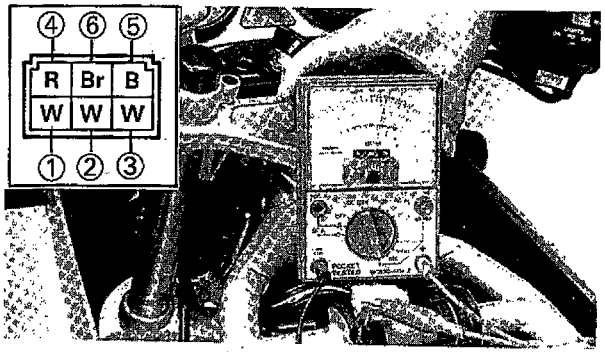
Stator Coil Resistance:
(W-W)
0.44Ω ± 15% at 20°C (68°F)



RECTIFIER/REGULATOR

1. Remove:
   - Seat
   - Fuel tank
2. Check:
   - Diodes (all)
     Defective element → Replace rectifier.
     Use the Pocket Tester (90890-03104).

① White
② White
③ White
④ Red
⑤ Black
⑥ Brown
A IC Regulator
B Rectifier



Checking element	Pocket tester connecting point (+) (Red)	Pocket tester connecting point (−) (Black)	Good
D_1	④	①	○
	①	④	×
D_2	④	②	○
	②	④	×
D_3	④	③	○
	③	④	×
D_4	⑤	①	×
	①	⑤	○
D_5	⑤	②	×
	②	⑤	○
D_6	⑤	③	×
	③	⑤	○

○: Continuity
×: Discontinuity (∞)

CAUTION:

Do not overcharge rectifier or damage may result.
Avoid:
- **A short circuit**
- **Inverting + and - battery leads**
- **Direct connection of rectifier to battery**

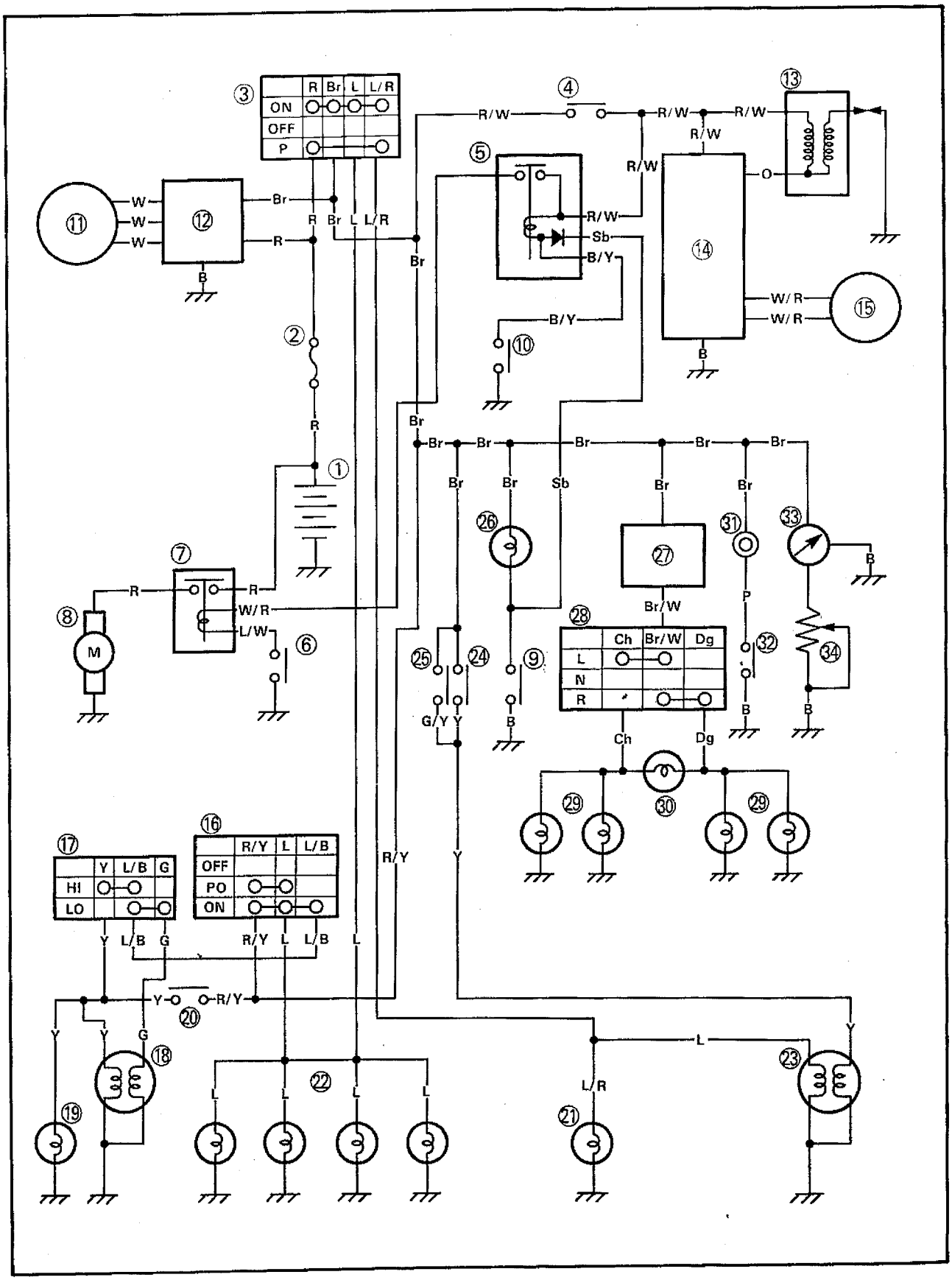
NOTE:

The results of "○" and "×" should be reversed according to the polarity of the specific pocket tester used.

IGNITION SYSTEM

Circuit Diagram

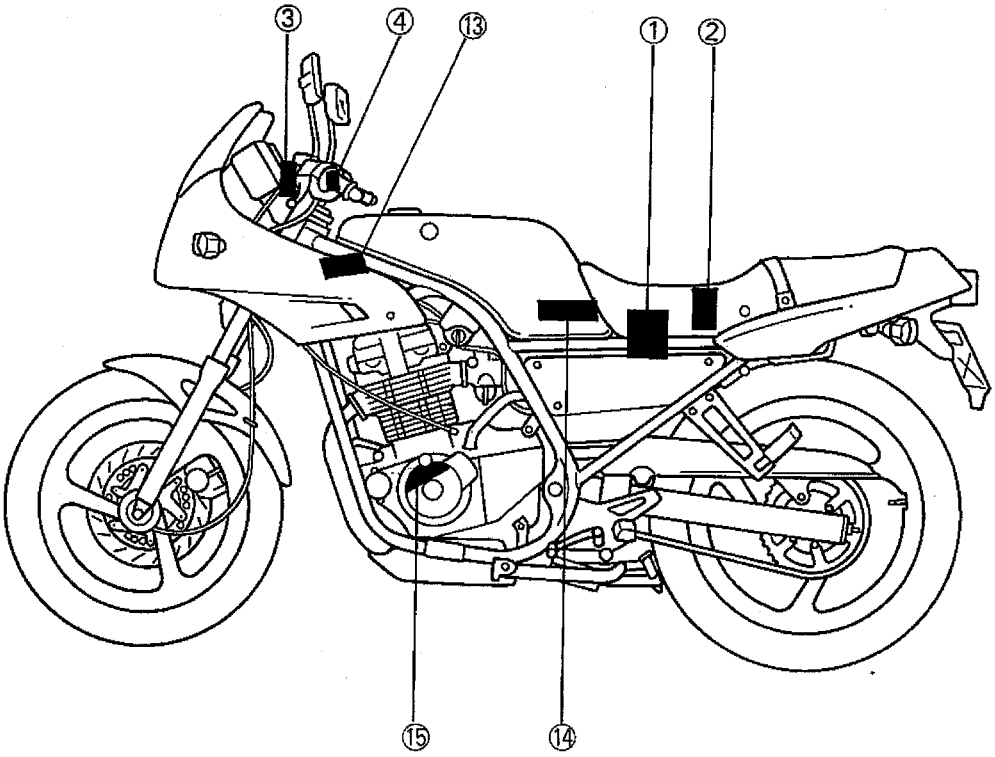
Below circuit diagram shows ignition circuit



① **Battery**
② **Main fuse**
③ **Main switch**
④ **Engine stop switch**
⑤ Starting circuit cut-off relay
⑥ Starter switch
⑦ Starter relay
⑧ Starter motor
⑨ Neutral switch
⑩ Clutch switch
⑪ A.C. Magneto
⑫ Rectifier/Regulator
⑬ **Ignition coil**
⑭ **Ignitor unit**
⑮ **Pick up coil**
⑯ "LIGHT" switch
⑰ Dimmer switch
⑱ Headlight
⑲ High beam indicator
⑳ "PASSING" switch
㉑ Marker light
㉒ Meter lights
㉓ Tail/brake light
㉔ Rear brake switch
㉕ Front brake switch
㉖ Neutral indicator light
㉗ Flasher relay
㉘ "TURN" switch
㉙ Flasher lights
㉚ Flasher indicator light
㉛ Horn
㉜ Horn switch
㉝ Fuel meter
㉞ Fuel level sender

COLOR CODE

L	Blue
R	Red
G	Green
Br	Brown
B	Black
Ch	Chocolate
Y	Yellow
P	Pink
W	White
O	Orange
Dg	Dark green
Sb	Sky blue
Lg	Light green
W/R	White/Red
Br/W	Brown/White
L/W	Blue/White
L/B	Blue/Black
G/Y	Green/Yellow
R/W	Red/White
L/R	Blue/Red
B/Y	Black/Yellow
R/Y	Red/Yellow



IGNITION SYSTEM

TROUBLESHOOTING CHART

THE SPARK IS NOT PRODUCE OR WEAK

A

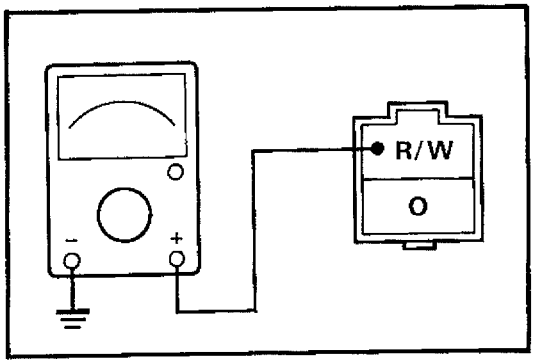
1. Remove:
   - Spark Plug
2. Check:
   - Spark plug type
     D8EA (NGK)
     X24ES-U (NIPPON DENSO)
3. Measure:
   - Electrode gap
     0.6 ~ 0.7 mm (0.0236 ~ 0.0276 in)

NO → Clean off carbon, regap, and/or replace spark plug

OK ↓

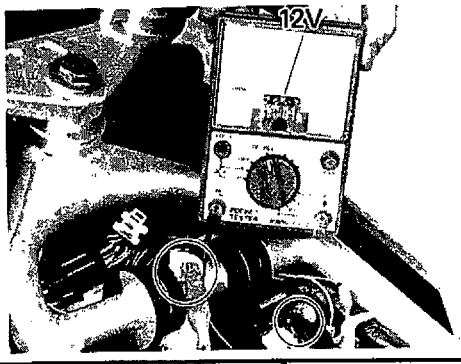
B

1. Remove:
   - Seat
   - Fuel tank
2. Disconnect:
   - Ignition coil coupler
3. Connect:
   - Pocket Tester
     to wire harness side coupler



NO → • Check the main switch, main fuse, engine stop switch and battery
• Replace faulty parts and/or charge battery

4. Measure:
   - Battery voltage (12V)
     on the "R/W" lead
     Turn main switch to "ON"
     Turn engine stop switch to "RUN"



OK ↓

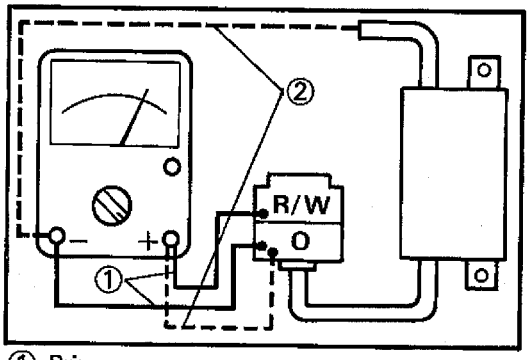
OK

C
1. Remove:
   •Spark plug cap
2. Measure:
   •Spark plug cap resistance
   10 kΩ ± 10%

NO → Replace spark plug cap

OK

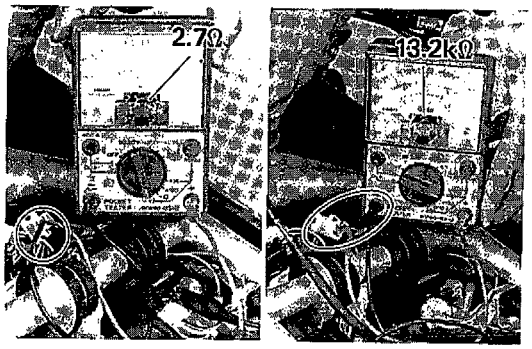
D
1. Connect:
   •Pocket Tester
   to ignition coil side coupler



① Primary
② Secondary

2. Measure:
   •Primary coil resistance
   2.7Ω ± 10%
   •Secondary coil resistance
   13.2 kΩ ± 20%

NO → Replace ignition coil

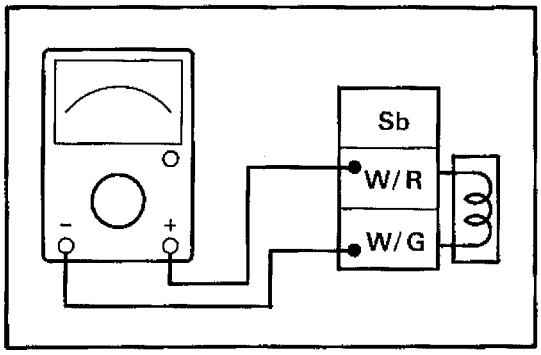


OK

OK

E

1. Disconnect:
   • Pick up coil coupler
2. Connect:
   • Pocket Tester to pick up coil side coupler



3. Measure:
   • Pick up coil resistance
   (10Ω ± 15%)

NO → Replace pick up coil

OK

• Check all connection

NO → Correct connection

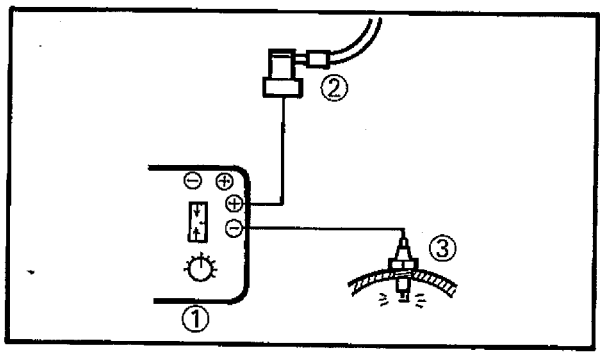
OK

• Replace ignitor unit

ENTIRE IGNITION SYSTEM CHECK

The entire ignition system can be checked for misfire and weak spark by using the Electro Tester.

1. Warm up the engine so that all of the electrial components are at operating temperature.



2. Connect:
   - Electro Tester (90890-03104) ①
3. Start the engine, and increase the spark gap until misfire occurs. (Test at vaious r/min between idle and red line.)

② Spark plug wire
③ Spark plug

CAUTION:

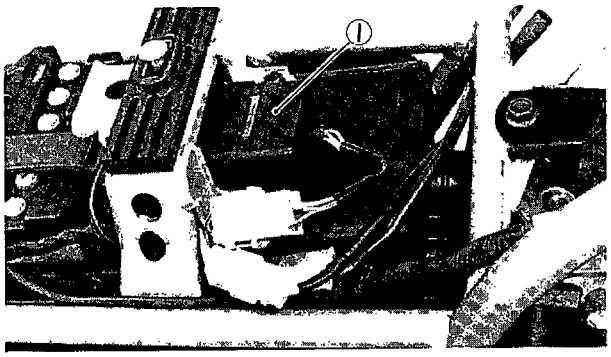
Do not run the engine in neutral above 6,000 r/min for more than 1 or 2 seconds.

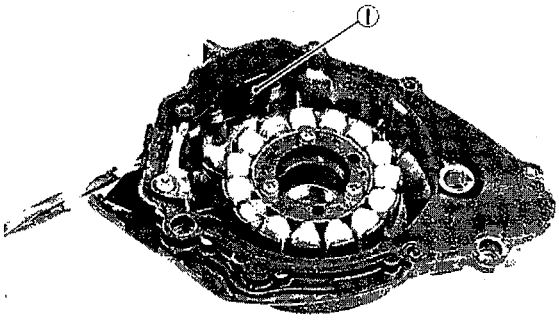
Minimum Spark Gap:
6 mm (0.24 in)

Faulty ignition system operation (at the minimum spark gap or smaller)→Follow the troubleshooting chart until the source of the problem is located.

DESCRIPTION

This model is equipped with a battery operated, fully transistorized, breakerless ignition system. By using magnetic pickup coils, the need for contact breaker points is eliminated. This adds to the dependability of the system by eliminating frequent cleaning and adjustment of points and ignition timing. The TCI (Transistor Control Ignition) unit incorporates an automatic advance circuit controlled by signals generated by the pickup coils. This adds to the dependability of the system by eliminating the mechanical advancer. This TCI system consists of two units; a pickup unit and an ignitor unit.





OPERATION

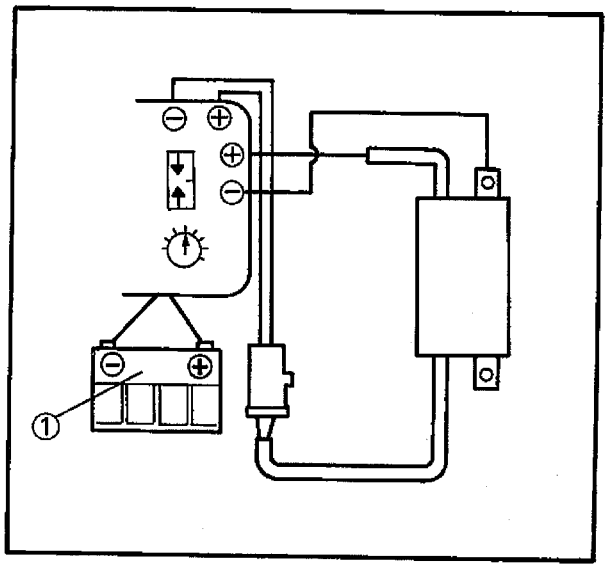
The TCI functions on the same principle as a conventional DC ignition system with the exception of using magnetic pickup coils and a transistor control box (TCI) in place of contact breaker poins.

① Ignitor unit

Pickup Unit

The pickup unit consists of two pickup coils ① and a flywheel mounted onto the crankshaft. When the projection on the flywheel passes a pickup coil, a signal is generated and transmited to the ignitor unit. The width of the projection on the flywheel determines the ignition advance.

The pickup coils are located in the right crankcase cover.



IGNITION COIL

Ignition Spark Gap

1. Remove:
   - Seat
   - Fuel tank
2. Disconnect:
   - Ignition coil leads
   - Spark plug leads
3. Connect:
   - Electro Tester (90890-03104)

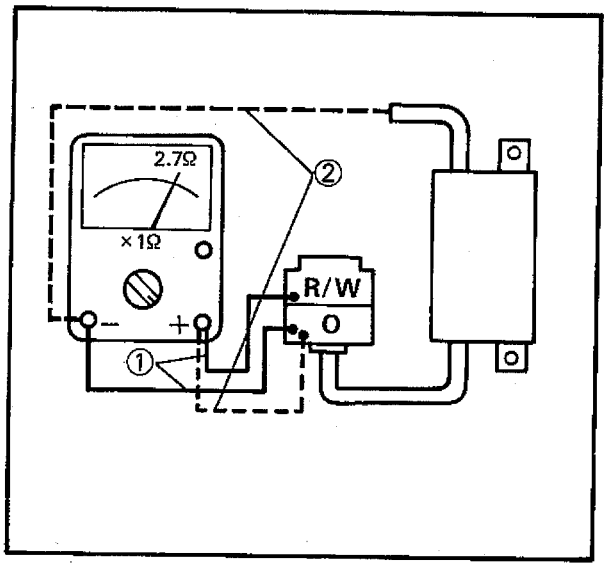
NOTE:

Be sure to use a fully charged battery.

4. Turn the spark plug gap adjuster and increase the gap to the maximum limit unless misfire occurs first.

Minimum Spark Gap:
6 mm (0.24 in)

① Battery (12V)

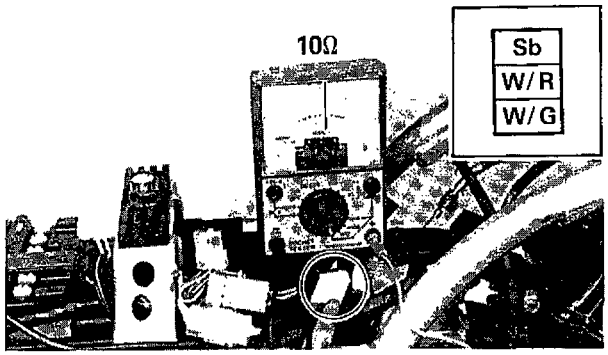


Ignition Coil Resistance

1. Connect:
   - Pocket Tester (90890-03104)
2. Measure:
   - Primary coil resistance ①
   - Secondary coil resistance ②
   - Spark plug cap resistance.

   Out of specification→Replace.

Primary Coil Resistance:
2.7Ω±10% at 20°C (68°F)
Secondary Coil Resistance:
13.2 kΩ±20% at 20°C (68°F)
Spark Plug Cap:
10 kΩ±10% at 20°C (68°F)



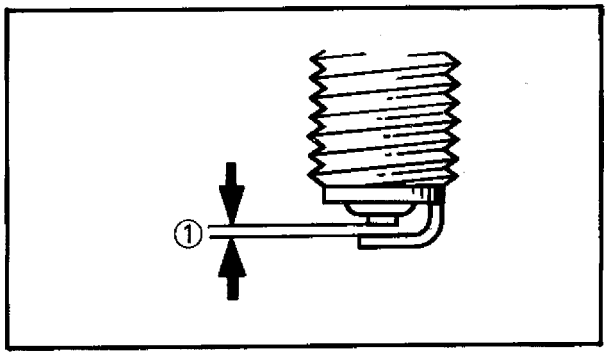
PICKUP COIL

1. Remove:
   - Seat
   - Fuel tank
2. Disconnect:
   - Pickup coil coupler
3. Measure:
   - Pickup coil resistance

   Use the Pocket Tester.

   Out of specification→Replace.

Pickup Coil Resistance:
10Ω ± 15% at 20°C (68°F)
(White/Red — White/Green)



SPARK PLUG

1. Inspect:
   - Spark plug

   Burns/Fouling/Wear→Replace.
2. Measure:
   - Electrode gap ①

   Out of specification→Clean off carbon and regap.

Electrode Gap:
0.6 ~ 0.7 mm (0.0236 ~ 0.0276 in)

NOTE:

Clean and inspect spark plugs every 4,000 km (2,500 mi) and replace after initial 7,000 km (4,400 mi).

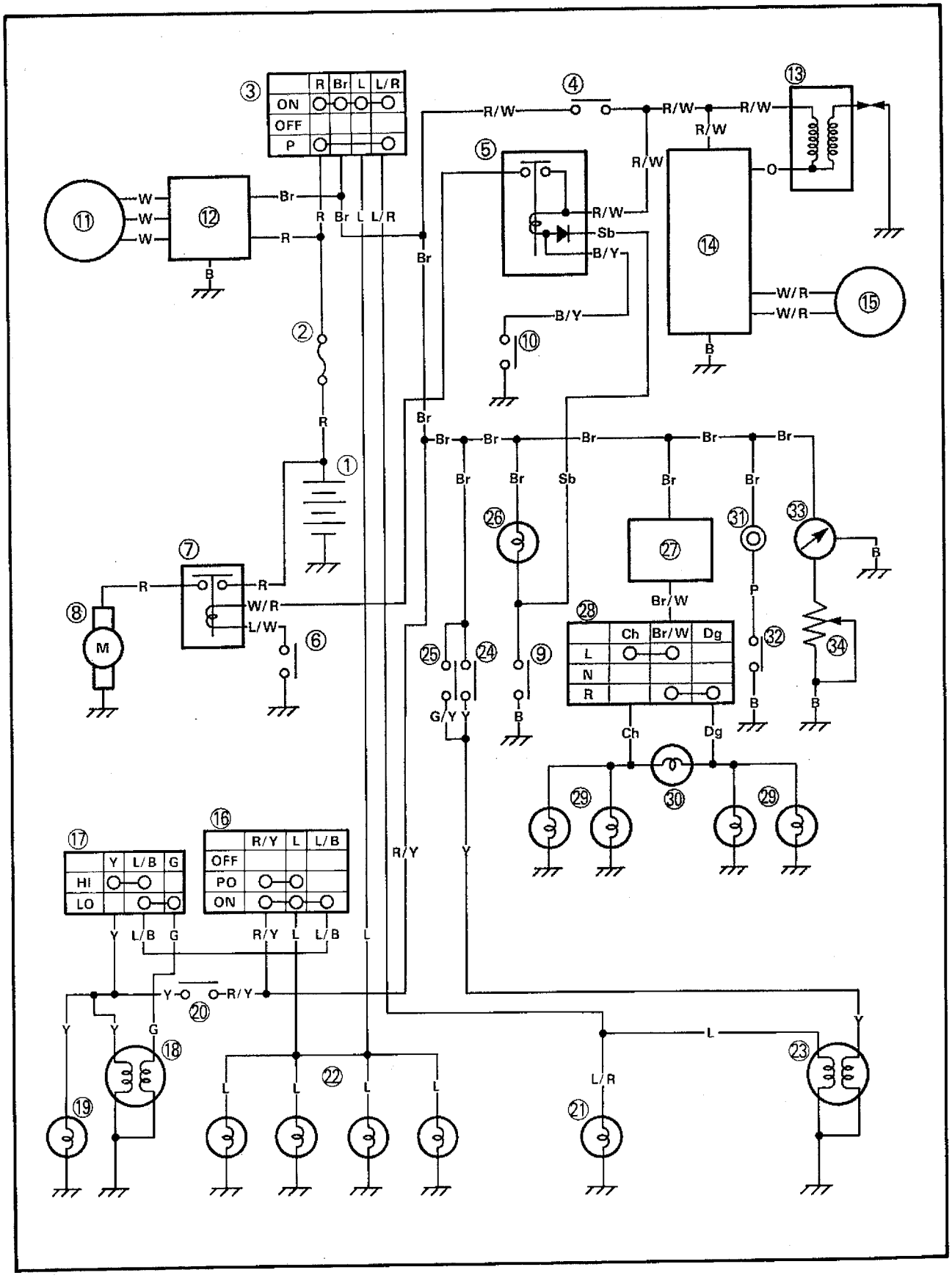
Type:
D8EA (NGK),
X24ES-U (NIPPON DENSO)

17.5 Nm (1.75 m•kg, 12.5 ft•lb)

LIGHTING SYSTEM

Circuit Diagram

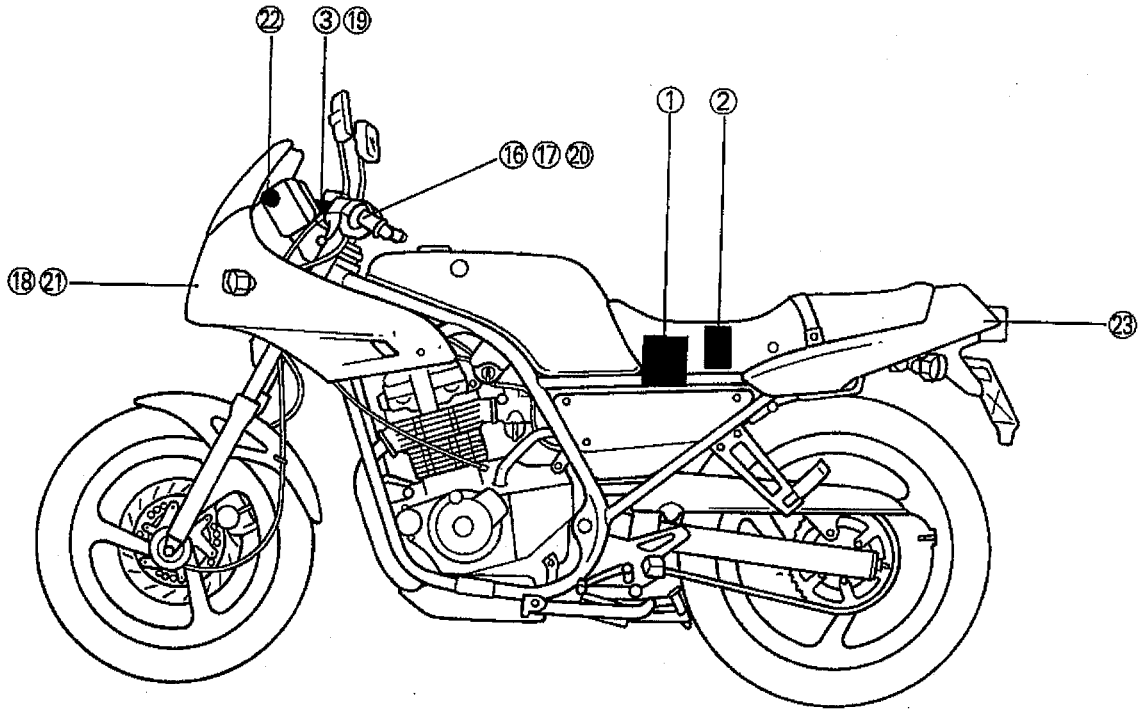
Below circuit diagram shows lighting circuit



① **Battery**
② **Main fuse**
③ **Main switch**
④ Engine stop switch
⑤ Starting circuit cut-off relay
⑥ Starter switch
⑦ Starter relay
⑧ Starter motor
⑨ Neutral switch
⑩ Clutch switch
⑪ A.C. Magneto
⑫ Rectifier/Regulator
⑬ Ignition coil
⑭ Ignitor unit
⑮ Pick up coil
⑯ **"LIGHT" switch**
⑰ **Dimmer switch**
⑱ **Headlight**
⑲ **High beam indicator**
⑳ **"PASSING" switch**
㉑ **Marker light**
㉒ **Meter lights**
㉓ **Tail/brake light**
㉔ Rear brake switch
㉕ Front brake switch
㉖ Neutral indicator light
㉗ Flasher relay
㉘ "TURN" switch
㉙ Flasher lights
㉚ Flasher indicator light
㉛ Horn
㉜ Horn switch
㉝ Fuel meter
㉞ Fuel level sender

COLOR CODE

L	Blue
R	Red
G	Green
Br	Brown
B	Black
Ch	Chocolate
Y	Yellow
P	Pink
W	White
O	Orange
Dg	Dark green
Sb	Sky blue
Lg	Light green
W/R	White/Red
Br/W	Brown/White
L/W	Blue/White
L/B	Blue/Black
G/Y	Green/Yellow
R/W	Red/White
L/R	Blue/Red
B/Y	Black/Yellow
R/Y	Red/Yellow



TROUBLESHOOTING CHART (1)

THE HEADLIGHT AND HIGHBEAM INDICATOR LIGHT DO NOT COME ON

A

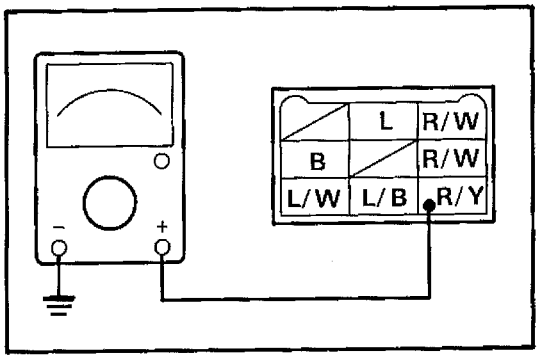
1. Disconnect:
   - Headlight coupler
2. Remove
   - Cover
   - Fitting plate
   - Headlight bulb
3. Check:
   - Bulbs

Faulty → Replace bulbs

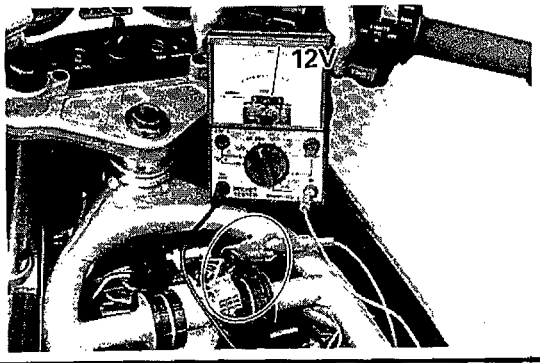
OK

B

1. Remove:
   - Seat
   - Fuel tank
2. Disconnect
   - Light switch
3. Connect:
   - Pocket Tester to wire harness side coupler



4. Measure:
   - Battery voltage (12V)
     on the "R/Y" lead
     Turn main switch to "ON"

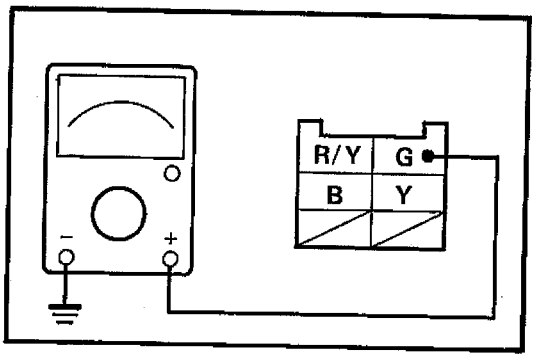


NO → • Check the main switch, main fuse, and battery
• Replace faulty parts and/or charge battery

12V

C

1. Disconnect:
   • Dimmer switch coupler
2. Connect:
   • Pocket Tester to wire harness side coupler



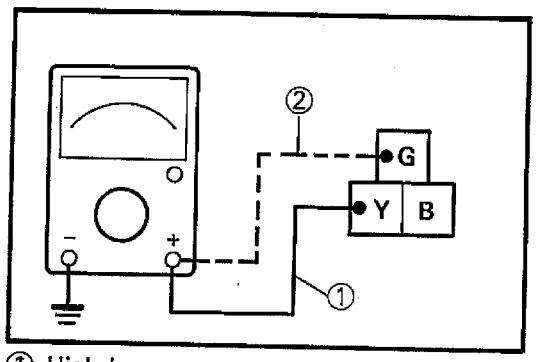
3. Measure:
   • Battery voltage (12V)
   on the "G" lead
   Turn main switch to "ON"
   Turn light switch to "ON"

NO → Replace light switch

OK

D

1. Disconnect:
   • Headlight coupler
2. Connect:
   • Pocket Tester to headlight coupler



① High beam
② Low beam

2. Measure:
   • Battery voltage (12V)
   on "Y" and "G" leads

NO → Replace dimmer switch

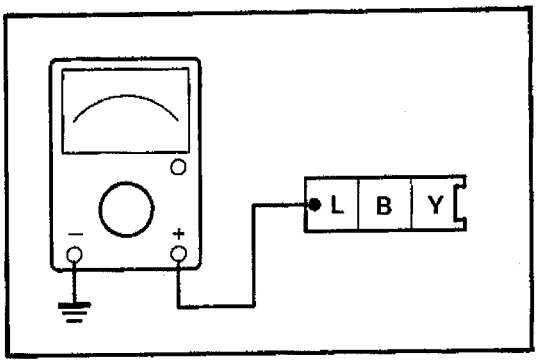
OK → Correct connection

TROUBLESHOOTING CHART (2)

THE TAIL LIGHT DOES NOT COME ON

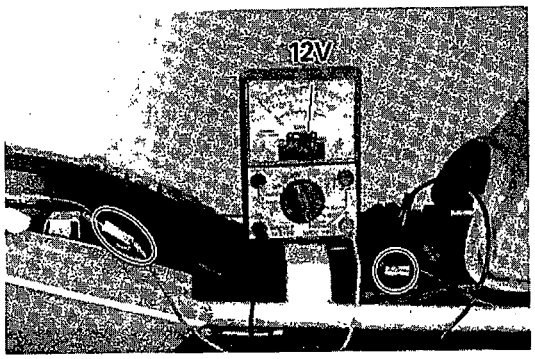
A

1. Remove:
   - Seat
2. Disconnect:
   - Taillight coupler
3. Connect:
   - Pocket Tester to wire harness side coupler



NO → • Check the main switch, main fuse, and battery
• Replace faulty parts and/or charge battery

4. Measure:
   - Battery voltage (12V)
     on the "L" leads
     Turn main switch to "ON"
     Turn light switch to "ON"

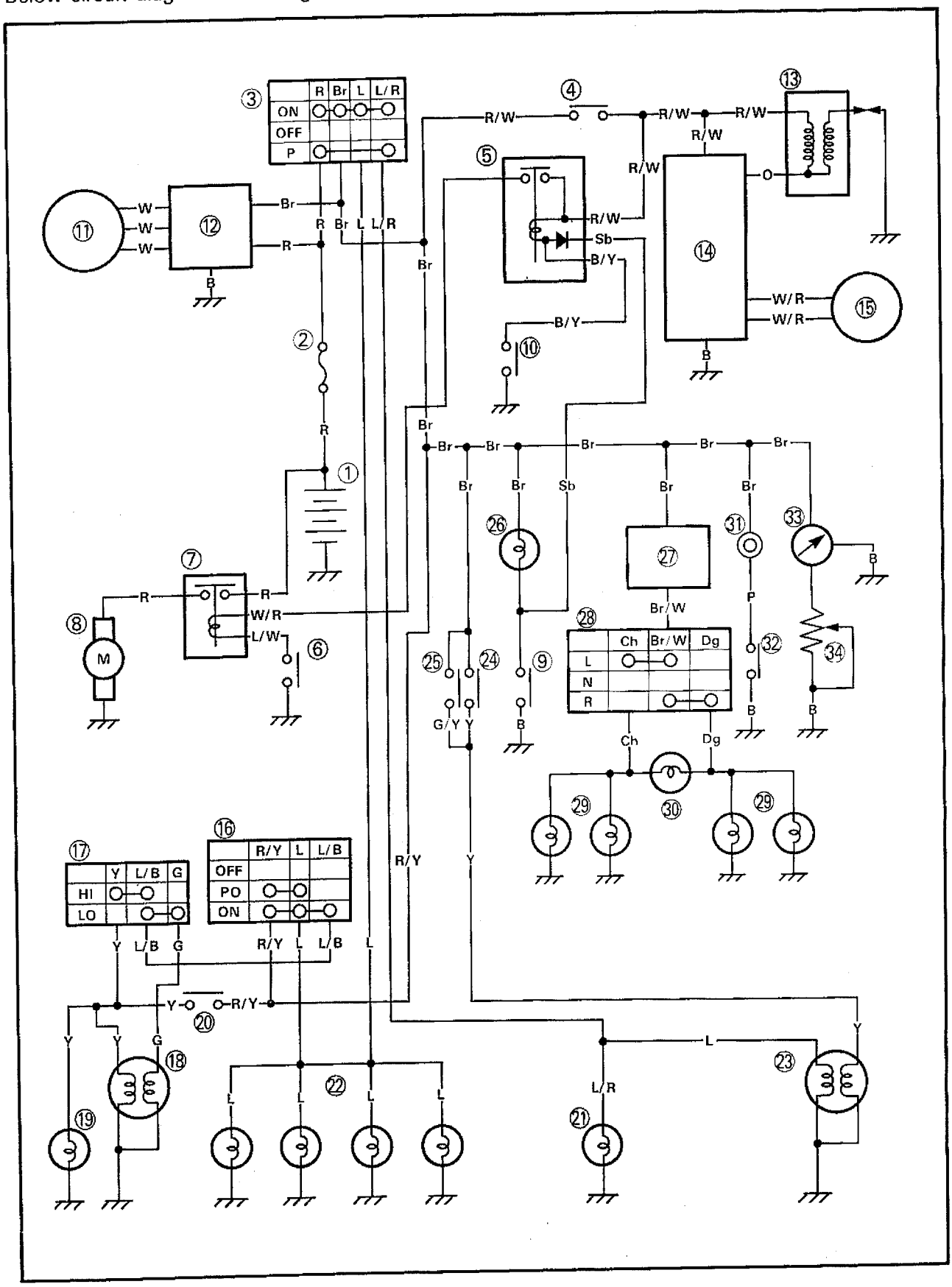


OK → • Replace bulb and/or correct connection

SIGNAL SYSTEM

Circuit Diagram

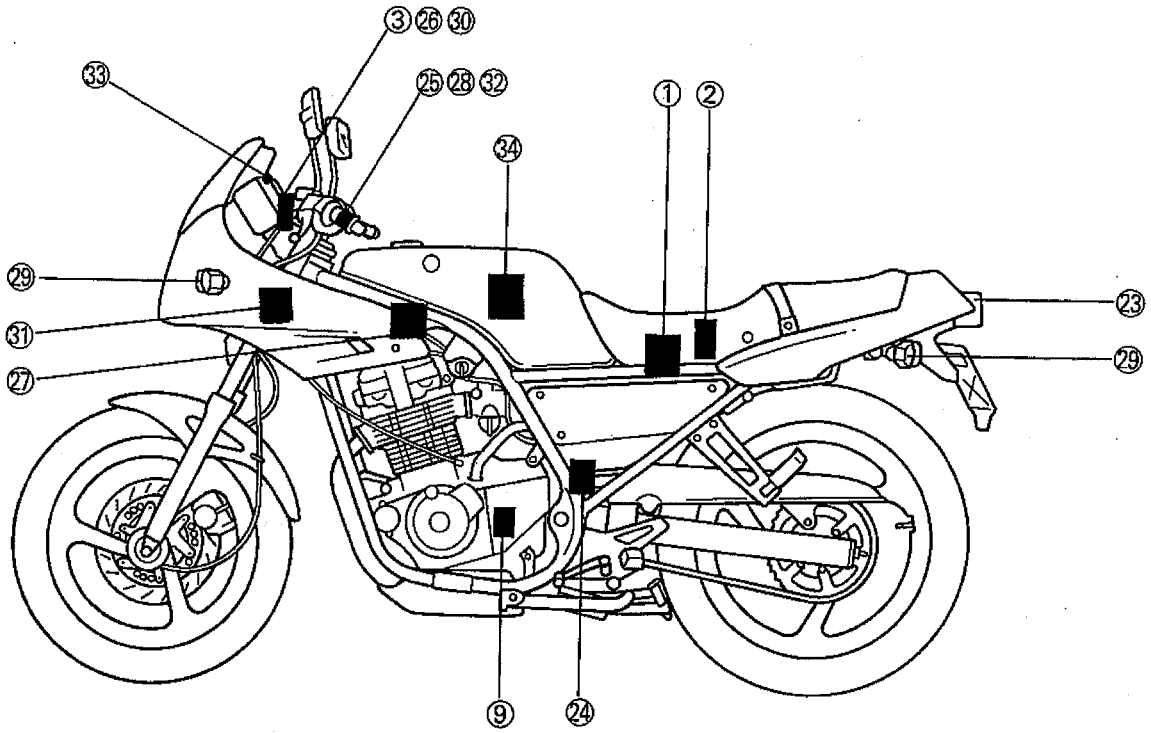
Below circuit diagram shows signal circuit



① **Battery**
② **Main fuse**
③ **Main switch**
④ Engine stop switch
⑤ Starting circuit cut-off relay
⑥ Starter switch
⑦ Starter relay
⑧ Starter motor
⑨ **Neutral switch**
⑩ Clutch switch
⑪ A.C. Magneto
⑫ Rectifier/Regulator
⑬ Ignition coil
⑭ Ignitor unit
⑮ Pick up coil
⑯ "LIGHT" switch
⑰ Dimmer switch
⑱ Headlight
⑲ High beam indicator
⑳ "PASSING" switch
㉑ Marker light
㉒ Meter lights
㉓ **Tail/brake light**
㉔ **Rear brake switch**
㉕ **Front brake switch**
㉖ **Neutral indicator light**
㉗ **Flasher relay**
㉘ **"TURN" switch**
㉙ **Flasher lights**
㉚ **Flasher indicator light**
㉛ **Horn**
㉜ **Horn switch**
㉝ **Fuel meter**
㉞ **Fuel level sender**

COLOR CODE

L	Blue
R	Red
G	Green
Br	Brown
B	Black
Ch	Chocolate
Y	Yellow
P	Pink
W	White
O	Orange
Dg	Dark green
Sb	Sky blue
Lg	Light green
W/R	White/Red
Br/W	Brown/White
L/W	Blue/White
L/B	Blue/Black
G/Y	Green/Yellow
R/W	Red/White
L/R	Blue/Red
B/Y	Black/Yellow
R/Y	Red/Yellow



TROUBLESHOOTING CHART (1)

THE FLASHER LIGHT AND INDICATOR LIGHT DO NOT COME ON

A

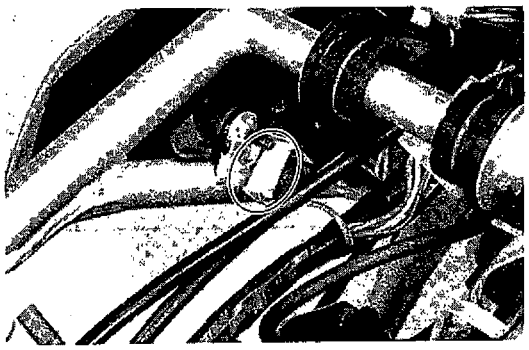
1. Remove:
   - Flasher light cover
   - Flasher light bulb
   - Flasher indicator light bulb
2. Check
   - Bulbs

Faulty → Replace bulb

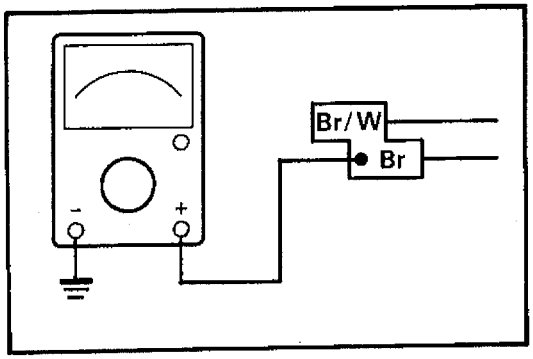
OK

B

1. Remove:
   - Seat
   - Fuel tank
2. Disconnect:
   - Flasher relay coupler



3. Connect:
   - Pocket Tester to wire harness side coupler



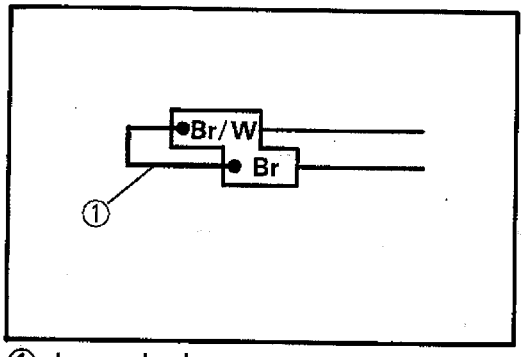
NO →
- Check the main switch, main fuse, and battery
- Replace faulty parts and/or charge battery

4. Measure:
   - Battery voltage (12V)
     On the "Br" lead
     Turn main switch to "ON"

OK

C

1. Connect:
   • Flasher relay coupler terminal



① Jamper lead

2. Check:
   • Flasher lights come on
   Turn main switch to "ON"
   Turn "TURN" switch to "L" or "R"

NO → Replace "TURN" switch

OK

Check all connection

NO → Correct connection

OK

Replace flasher relay

TROUBLESHOOTING CHART (2)

THE BRAKE LIGHT DOES NOT COME ON

A

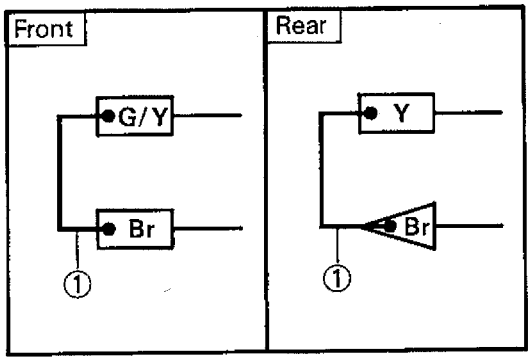
1. Remove:
   - Brake light cover
   - Brake light bulb
2. Check
   - Bulbs

Faulty → Replace bulbs

OK ↓

B

1. Remove:
   (Front brake)
   - Seat
   - Fuel tank
   (Rear brake)
   - Right side cover
2. Disconnect:
   - Brake switch connector
3. Connect:
   - Wire harness side Coupler terminal



① Jamper lead

4. Check:
   - Brake light comes on
   Turn main switch to "ON"
   Apply brake lever or step down brake pedal

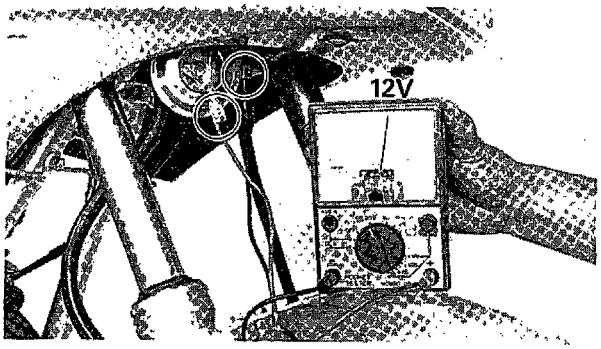
NO → • Check the main switch, main fuse and battery
• Replace faulty parts and/or charge battery

OK ↓

Check all connection → NO → Correct connection

OK ↓

Replace brake switch



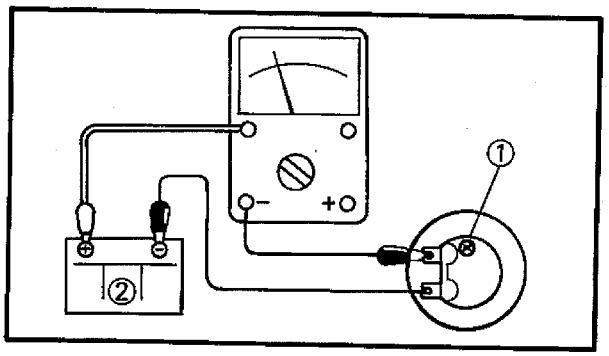
HORN

Check for:	Horn inoperative
	12V on brown wire to horn
	Good ground (horn/pink wire) when horn button is pressed

Defective components→Replace.

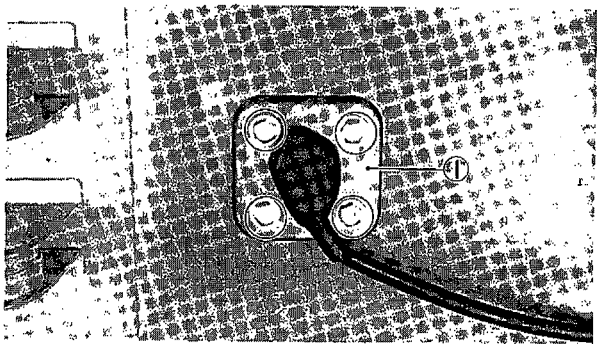
2. Measure:
   • Horn resistance
   Out of specification→Replace.

Tester's lead wire		Standard resistance	Tester's range
Red lead	Black lead		
Brown lead	Pink lead	4.7 ~ 4.8Ω	R×1



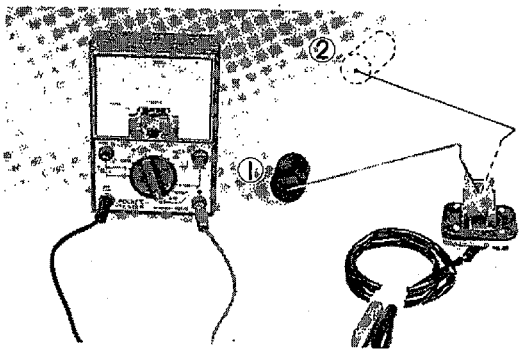
3. Adjust:
   • Volume
   Turn the adjuster ① in and out so that the volume is maximum at the maximum amperage.

② Battery (12V)



FUEL LEVEL SENSOR

1. Remove:
   • Seat
   • Fuel tank
   • Fuel level sensor ①



2. Measure:
   • Fuel sensor resistance
   Use Pocket Tester.
   Out of specification→Relace.

Fuel sensor resistance	
Full ②	10Ω ± 10%
Empty ①	90Ω ± 15%

NOTE:

For installation reverse removal procedure.

SIGNAL SYSTEM

SWITCHES

Switches may be checked for continuity with the Pocket Tester on the "ohm × 1" position.

A Main switch

Switch position	Wire color			
	R	Br	L	L/R
P	○			○
OFF				
ON	○	○	○	○

B "ENGINE STOP" switch

Switch position	Wire color	
	R/W	R/W
OFF		
RUN	○	○

C "START" switch

Button position	Wire color	
	L/W	B
OFF		
PUSH	○	○

D "DIMMER" switch

Switch position	Wire color		
	Y	L/B	G
HI	○	○	
LO		○	○

E "TURN" switch

Switch position		Wire color				
		Ch	Br/W	Dg	L	L/W
L		○	○			
N	L	○	○			
	N				○	○
	R		○	○		
R			○	○		

F "HORN" switch

Button position	Wire color	
	P	B
PUSH	○	○
OFF		

G "BRAKE" switch

Brake lever/ (pedal position)	Wire color	
	Br(Y)	G/Y (Y)
FREE		
DEPRESS	○	○

H "LIGHT" switch

Switch position	Wire color		
	R/Y	L	L/B
OFF			
P	○	○	
ON	○	○	○

CHAPTER 7.
APPENDICES

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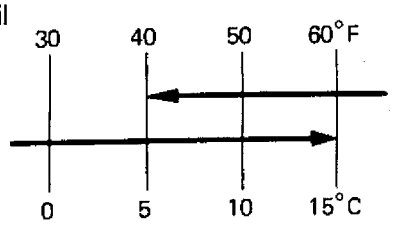
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CHAPTER 7. APPENDICES

SPECIFICATIONS

GENERAL SPECIFICATIONS

Model	SRX250
Engine Starting Number	56K-000101
Dimensions: Overall Length Overall Width Overall Height Seat Height Wheelbase Minimum Ground Clearance	 1,970 mm (77.6 in) 710 mm (28.0 in) 1,090 mm (42.9 in) 750 mm (29.5 in) 1,340 mm (52.8 in) 145 mm (5.7 in)
Basic Weight: With Oil and Full Fuel Tank	 134 kg (295 lb)
Minimum Turning Radius	2,600 mm (102.4 in)
Engine: Engine Type Cylinder Arrangement Displacement Bore × Stroke Compression Ratio Compression Pressure Starting System	 Air cooled, 4-stroke, gasoline, DOHC Single cylinder 249 cm^3 73.00 × 59.60 mm (2.87 × 2.35 in) 10.0 : 1 130 kPa (13.0 kg/cm^2, 185 psi) Electric starter
Lubrication System	Wet sump (Pressure lubricated)
Oil Type or Grade: Engine Oil 	 SAE 20W40 type SE motor oil (If temperature does not go below 5°C (40°F).) SAE 10W30 type SE motor oil (If temperature does not go above 15°C (60°F).)
Oil Capacity: Engine Oil Periodic Oil Change Total Amount	 1.5 L (1.32 Imp qt, 1.6 US qt) 1.8 L (1.58 Imp qt, 1.9 US qt)
Air Filter	Wet type element
Fuel: Type Tank Capacity	 Regular gasoline 10 L (8.8 Imp qt, 2.64 US gal)

Model	SRX250	
Carburetor:		
Type/Manufacturer	Y24PV/TEIKEI KIKAKI	
Spark Plug:		
Type/Manufacturer	D8EA (NGK)/X24ES-U (ND)	
Gap	0.6 ~ 0.7 mm (0.0236 ~ 0.0276 in)	
Clutch Type	Wet Multiple-disc	
Transmission:		
Primary Reduction System	Spur gear	
Primary Reduction Ratio	72/23 (3.130)	
Secondary Reduction System	Chain drive	
Secondary Reduction Ratio	43/14 (3.071)	
Transmission Type	Constant mesh 6-speed	
Operation	Left foot operation	
Gear Ratio 1st	37/15 (2.466)	
2nd	29/16 (1.812)	
3rd	30/22 (1.363)	
4th	27/25 (1.080)	
5th	24/27 (0.888)	
6th	25/32 (0.781)	
Chassis:		
Frame Type	Double cradle	
Caster Angle	26°30′	
Trail	93 mm (3.66 in)	
Tire:		
Type	Tubeless	
Size (F)	90/90-16 48S	
Size (R)	100/90-18 56S	
Cold Tire Pressure		
Maximum load*	130 kg (287 lb)	
	Front	Rear
Up to 90 kg (198 lb) load*	177 kPa (1.8 kg/cm², 25.6 psi)	196 kPa (2.0 kg/cm², 28 psi)
90 kg (198 lb) 155 kg (341 lb) load* (Maximum load)	196 kPa (2.0 kg/cm², 28 psi)	225 kPa (2.3 kg/cm², 32.7 psi)
High-speed Riding	196 kPa (2.0 kg/cm², 28 psi)	225 kPa (2.3 kg/cm², 32.7 psi)
Brake:		
Front Brake Type	Single disc brake	
Operation	Right hand operation	
Rear Brake Type	Drum brake	
Operation	Right foot operation	

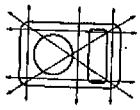
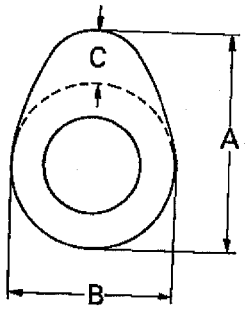
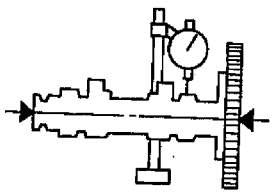
*Load is the total weight of cargo, rider, passenger, and accessories

APPX GENERAL SPECIFICATIONS

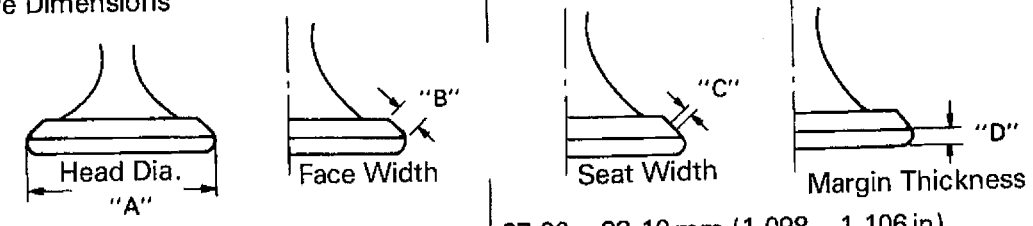
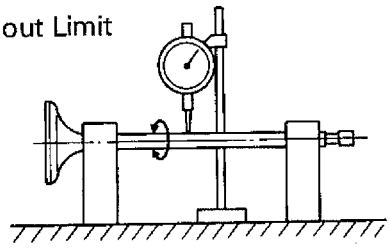
Model	SRX250
Suspension: Front Suspension Rear Suspension	 Telescopic fork Swingarm
Shock Absorber: Front Shock Absorber Rear Shock Absorber	 Coil spring, Oil damper Coil spring, Gas-oil damper
Wheel Travel: Front Wheel Travel Rear Wheel Travel	 140 mm (5.51 in) 100 mm (3.93 in)
Electrical: Ignition System Generator System Battery Type or Model Battery Capacity	 Full transistor ignition A.C. Magneto Generator 12N12A-4A 12V 12AH
Headlight Type	Bulb
Bulb Wattage/Quantity: Headlight Tail/Brake Light Flasher Light Licence Light Meter Light Marker Light	 60W/55W 8W/27W × 1 27W × 4 8W × 1 3.4W × 3 3W × 1 3.4W × 1
Indicator Light Wattage/Quantity: "HIGH BEAM" "TURN" "NEUTRAL"	 3.0W × 1 3.0W × 2 3W × 1

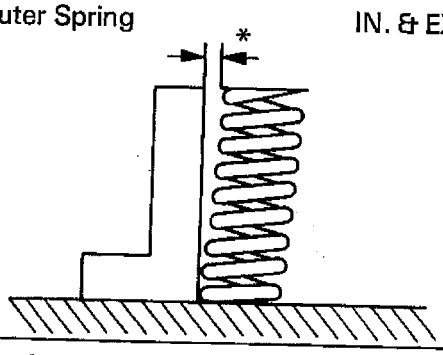
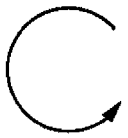
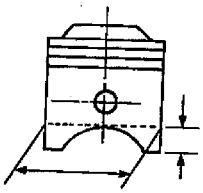
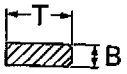
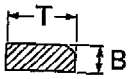
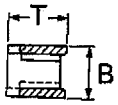
MAINTENANCE SPECIFICATIONS

Engine

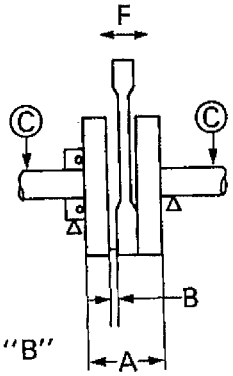
Model	SRX250
Cylinder Head: Warp Limit 	<0.03 mm (0.0012 in)> *Lines indicate straightedge measurement.
Cylinder: Bore Size	72.97 ~ 73.02 mm (2.873 ~ 2.875 in)
Camshaft: Drive Method Cam Cap Inside Diameter Camshaft Outside Diameter Cap Clearance <Limit> Cam Dimensions Intake  Exhaust "A" <Limit> "B" <Limit> "C" "A" <Limit> "B" <Limit> "C"	Chain (Right) 25.000 ~ 25.021 mm (0.984 ~ 0.985 in) 24.967 ~ 24.980 mm (0.9830 ~ 0.9835 in) 0.020 ~ 0.054 mm (0.0008 ~ 0.002 in) <0.150 mm (0.006 in)> 35.75 ~ 35.85 mm (1.407 ~ 1.411 in) <35.60 mm (1.402 in)> 27.998 ~ 28.098 mm (1.102 ~ 1.106 in) <27.85 mm (1.096 in)> 7.8 mm (0.307 in) 35.75 ~ 35.85 mm (1.407 ~ 1.411 in) <35.60 mm (1.402 in)> 27.998 ~ 28.098 mm (1.102 ~ 1.106 in) <27.85 mm (1.096 in)> 7.8 mm (0.307 in)
Camshaft Runout Limit 	<0.03 mm (0.001 in)>
Cam Chain Type/Number of Links Cam Chain Adjustment Method	79-010/136 Links Automatic
Valve, Valve Seat, Valve Guide: Valve Clearance (Cold) IN. EX.	 0.08 ~ 0.12 mm (0.003 ~ 0.005 in) 0.10 ~ 0.14 mm (0.00394 ~ 0.00551 in)

MAINTENANCE SPECIFICATIONS

Model		SRX250
Valve Dimensions		
"A" Head Dia.	IN.	27.90 ~ 28.10 mm (1.098 ~ 1.106 in)
	EX.	24.90 ~ 25.10 mm (0.980 ~ 0.988 in)
"B" Face Width	IN.	2.26 mm (0.09 in)
	EX.	2.26 mm (0.09 in)
"C" Seat Width	IN.	0.9 ~ 1.1 mm (0.0354 ~ 0.0433 in)
	EX.	0.9 ~ 1.1 mm (0.0354 ~ 0.0433 in)
"D" Margin Thickness Limit		
	IN.	0.6 ~ 1.0 mm (0.0236 ~ 0.0394 in)
	EX.	0.8 ~ 1.2 mm (0.0315 ~ 0.0472 in)
Stem Outside Diameter		
	IN.	5.475 ~ 5.490 mm (0.2156 ~ 0.2161 in)
	EX.	5.460 ~ 5.475 mm (0.2150 ~ 0.2156 in)
Guide Inside Diameter		
	IN.	5.500 ~ 5.512 mm (0.2165 ~ 0.2170 in)
<Limit>		<5.6 mm (0.22 in)>
	EX.	5.500 ~ 5.512 mm (0.2165 ~ 0.2170 in)
		<5.6 mm (0.22 in)>
Stem-to-guide Clearance		
	IN.	0.010 ~ 0.037 mm (0.0004 ~ 0.0015 in)
	EX.	0.025 mm ~ 0.040 mm (0.00098 ~ 0.0016 in)
Stem Runout Limit		<0.01 mm (0.0004 in)>
		
Valve Seat Width Standard		0.9 ~ 1.1 mm (0.0354 ~ 0.0433 in)
Valve Spring:		
Free Length		
Inner Spring	IN.	37.4 mm (1.472 in)
	EX.	37.4 mm (1.472 in)
Outer Spring	IN.	39.85 mm (1.569 in)
	EX.	39.85 mm (1.569 in)
Compressed Pressure/ Set Length		
Inner Spring	IN.	6.35 ~ 7.45 kg/31.8 mm (1.252 in)
	EX.	6.35 ~ 7.45 kg/31.8 mm (1.252 in)
Outer Spring	IN.	13.0 ~ 13.2 kg/33.8 mm (1.331 in)
	EX.	13.0 ~ 13.2 kg/33.8 mm (1.331 in)

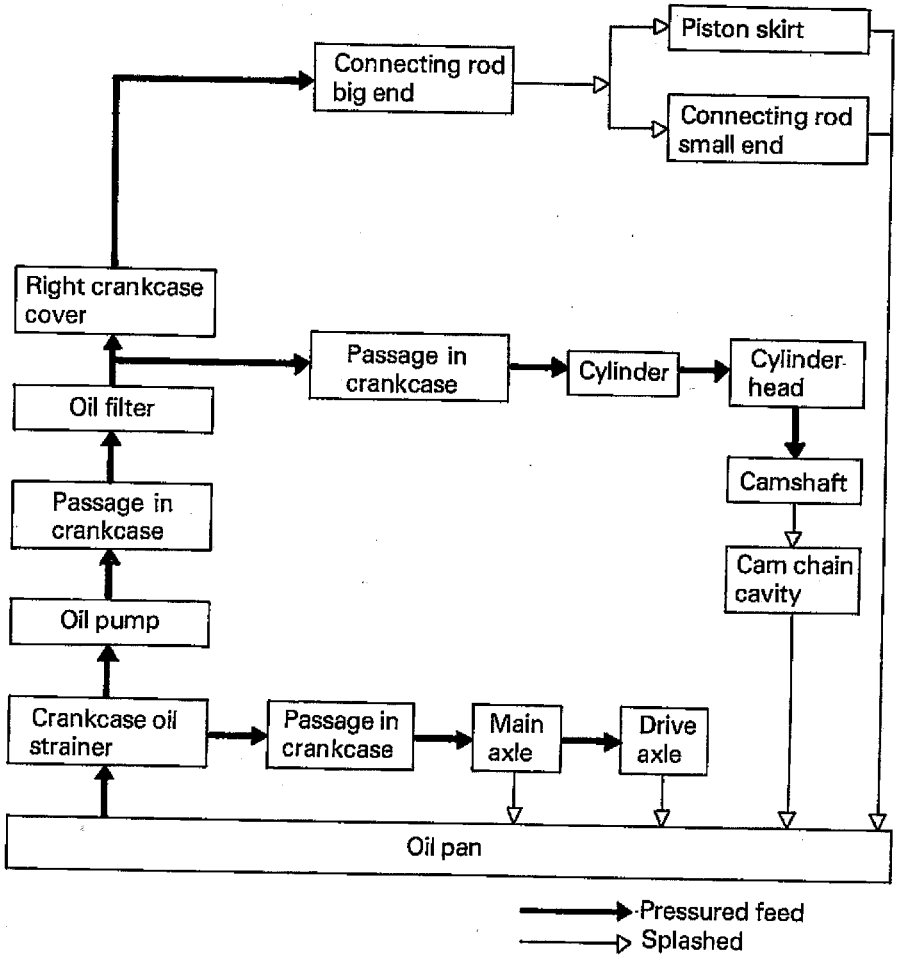
Model	SRX250	
Tilt Limit*:		
Inner Spring IN. & EX.	2.5° or 1.7 mm (0.067 in)	
Outer Spring IN. & EX.	2.5° or 1.7 mm (0.067 in)	
		
Direction of Winding (Top view)	Inner Spring	Outer Spring
	Left 	Right 
Piston:		
Piston Size/ Measuring Point* 	72.920 ~ 72.970 mm (2.871 ~ 2.873 in)/ *1.0 mm (0.0394 in) (From bottom line of piston skirt)	
Piston Clearance	0.040 ~ 0.060 mm (0.0015 ~ 0.0024 in)	
Oversize 2nd	73.50 mm (2.894 in)	
4th	74.00 mm (2.193 in)	
Piston Ring:		
Sectional Sketch		
Top Ring 	Barrel B = 1.2 mm (0.047 in) T = 3.1 mm (0.122 in) Taper B = 1.2 mm (0.047 in) T = 3.1 mm (0.122 in)	
2nd Ring 	B = 2.5 mm (0.098 in) T = 3.1 mm (0.122 in)	
Oil Ring 		
End Gap (Installed)		
Top Ring	0.20 ~ 0.35 mm (0.008 ~ 0.014 in)	
2nd Ring	0.20 ~ 0.35 mm (0.008 ~ 0.014 in)	
Oil Ring	0.30 ~ 0.90 mm (0.012 ~ 0.035 in)	
Side Clearance		
Top Ring	0.04 ~ 0.08 mm (0.002 ~ 0.003 in)	
2nd Ring	0.03 ~ 0.07 mm (0.001 ~ 0.003 in)	
Oil Ring	0.02 ~ 0.06 mm (0.0008 ~ 0.0024 in)	

APPX MAINTENANCE SPECIFICATIONS

Model	SRX250	
Crankshaft: 		
Crank Width "A"	58.95 ~ 59.00 mm (2.321 ~ 2.323 in)	
Big End Side Clearance "B"	0.35 ~ 0.85 mm (0.014 ~ 0.033 in)	
Runout Limit "C"	<0.03 mm (0.001 in)>	
Small End Free Play Limit "F"	0.8 mm (0.0315 in)	
Balancer Drive Method:	Gear	
Clutch:		
Friction Plate Thickness/Quantity	2.9 ~ 3.1 mm (0.114 ~ 0.122 in)/5	
Clutch Plate Thickness/Quantity	1.9 ~ 2.1 mm (0.0748 ~ 0.0827 in)/4	
Warp Limit	<0.05 mm (0.002 in)>	
Clutch Spring Free Length/Quantity	44 mm (1.732 in)/4	
Clutch Spring Minimum Length	43 mm (1.693 in)	
Clutch Release Method	Inner push (Cam push)	
Push Rod Bending Limit	<0.5 mm (0.02 in)>	
Air Filter Oil Grade (Oiled Filter)	SAE 10W30 SE motor oil	
Carburetor:		
Type/Manufacturer/Quantity	Y24PV/TK-KIKAKI/1	
I.D. Mark	51Y00	
	Primary carb.	Secondary carb.
Main Jet (M.J.)	#118	#80
Main Air Jet (M.A.J.)	ø1.6	ø1.4
Jet Needle-clip Position (J.N.)	5C3A-3	4A70-3
Main Nozzle (M.N.)	ø2.610	ø2.600
Pilot Jet (P.J.)	#42	—
Pilot Air jet (P.A.J.)	ø1.0	—
Pilot Screw (turns out) (P.S.)	2-1/2	—
Valve Seat (V.S.)	ø2.5	—
Starter Jet ($G.S._1$)	#72	—
($G.S._2$)	#80	—
Float Level (F.L.)	6.0 ± 1 mm (0.24 ± 0.04 in)	
Engine Idling Speed	1,300 ~ 1,400 r/min	
Vacuum Pressure at Idling Speed	26.6 kPa (200 mmHg, 7.9 inHg)	

Model	SRX250
Lubrication System:	
Oil Filter Type	Wire mesh
Oil Pump Type	Trochoid pump
Tip Clearance	0.15 mm (0.00591 in)
Side Clearance	0.03 ~ 0.09 mm (0.001 ~ 0.004 in)
Bypass Valve Setting Pressure	98.07 ± 19.6 kPa (1.0 ± 0.2 kg/cm², 14.22 ± 2.84 psi)
Relief Valve Operating Pressure	98.07 ± 19.6 kPa (1.0 ± 0.2 kg/cm², 14.22 ± 2.84 psi)

Lubrication Chart



MAINTENANCE SPECIFICATIONS

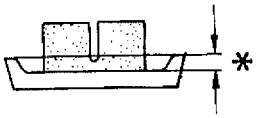
Engine

Tightening Torque:		Thread Size	Q'ty	Nm	m·kg	ft·lb	Remarks
Cylinder head	Flange bolt	M10×1.25	4	40	4.0	29	
Cylinder head	Bolt	M 6×1.0	2	10	1.0	7.2	
Cylinder head	Nut	M 8×1.25	2	20	2.0	14	
Spark plug	—	M12×1.25	1	17.5	1.75	12.5	
Camshaft cap	Flange bolt	M 6×1.0	8	10	1.0	7.2	
Cylinder head cover	Bolt	M 6×1.0	5	10	1.0	7.2	
Primary drive gear	Nut	M16×1.0	1	70	7.0	50	Use lock washer
Balancer shaft driven gear	Nut	M16×1.0	1	60	6.0	43	Use lock washer
A.C. Generator rotor	Bolt	M10×1.25	1	60	6.0	43	
Cam sprocket	Bolt	M 7×1.0	4	20	2.0	14	
Cam chain tensioner	Bolt	M 6×1.0	2	12	1.2	8.7	
Rear cam chain guide	Bolt	M 6×1.0	2	8	0.8	5.8	
Oil pump assembly	Screw	M 6×1.0	3	7	0.7	5.1	
Oil pump cover	Screw	M 6×1.0	1	7	0.7	5.1	
Oil strainer plug	—	M35×1.5	1	32	3.2	23	
Oil filter cover	Bolt	M 6×1.0	1	10	1.0	7.2	
Oil filter cover	Screw	M 6×1.0	2	7	0.7	5.1	
Oil filter cover air bleed	Screw	M 5×0.8	1	5	0.5	3.6	
Drain plug	Bolt	M14×1.25	1	43	4.3	31	
Carburetor joint	Bolt	M 6×1.0	4	12	1.2	8.7	
Air filter body	Bolt	M 6×1.0	4	8	0.8	5.8	
Exhaust pipe flange	Bolt	M 6×1.0	4	12	1.2	8.7	
Muffler bracket	Bolt	M10×1.25	1	30	3.0	22	
Muffler chamber	Bolt	M 8×1.25	1	15	1.5	11	
Crankcase	Screw	M 6×1.0	14	7	0.7	5.1	
Left crankcase cover	Screw	M 6×1.0	6	7	0.7	5.1	
Right crankcase cover	Screw	M 6×1.0	9	7	0.7	5.1	
Clutch cable bracket	Screw	M 6×1.0	1	7	0.7	5.1	
Balancer bearing retainer	Screw	M 6×1.0	2	7	0.7	5.1	Apply LOCTITE
Kick crank	Bolt	M 8×1.25	1	2	2.0	14	
Clutch spring	Screw with washer	M 6×1.0	4	8	0.8	5.8	
Clutch boss	Nut	M16×1.0	1	60	6.0	43	
Push lever stopper	Screw	M 8×1.25	1	12	1.2	8.7	
Clutch adjuster lock	Nut	M 6×1.0	1	8	0.8	5.8	
Drive chain sprocket (Front)	Bolt	M 6×1.0	2	10	1.0	7.2	
Shift cam segment	Torx	M 6×1.0	1	12	1.2	8.7	Apply LOCTITE
Change pedal	Bolt	M 6×1.0	1	8	0.8	5.8	
CDI magneto base	Screw	M 6×1.0	2	7	0.7	5.1	
Neutral switch	—	M10×1.25	1	20	2.0	14	
Tensioner cap	Flange bolt	M 6×1.0	1	6	0.6	4.3	

Chassis

Model	SRX250
Steering System:	
Steering Bearing Type	Ball Bearing
No./Size of Steel Balls	
Upper and lower	19 pcs/ 1/4 in
Front Suspension:	
Front Fork Travel	140 mm (5.51 in)
Fork Spring Free Length	513.5 mm (20.21 in)
<Limit>	<508.5 mm (20.02 in)>
Spring Rate K1	3.5 N/mm (0.35 kg/mm, 19.6 lb/in)
K2	5 N/mm (0.5 kg/mm, 28 lb/in)
Stroke K1	0 ~ 98 mm (0 ~ 3.85 in)
K2	98 ~ 140 mm (3.85 ~ 5.51 in)
Optional Spring	No.
Oil Capacity	243 cm³ (8.55 Imp oz, 8.21 US oz)
Oil Grade	Yamaha Fork oil 10wt
Rear Suspension:	
Shock Absorber Travel	40 mm (1.57 in)
Spring Free Length	222 mm (8.74 in)
Fitting length	204 mm (8.03 in)
Spring Rate	85 N/mm (8.5 kg/mm, 476 lb/in)
Stroke	0 ~ 40 mm (0 ~ 1.57 in)
Optional Spring	No.
Enclosed Gas Pressure	2,256 kPa (23 kg/cm², 327 psi)
Front Wheel:	
Type	Cast Wheel
Rim Size	MT2.15 × 16
Rim Material	Aluminum
Rim Runout Limit Radial	2 mm (0.08 in)
Lateral	2 mm (0.08 in)
Rear Wheel:	
Type	Cast Wheel
Rim Size	MT2.15 × 16
Rim Material	Aluminum
Rim Runout Limit Radial	2 mm (0.08 in)
Lateral	2 mm (0.08 in)
Drive Chain:	
Type/Manufacturer	520V/DID
No. of Links	106 Links
Chain Slack	15 ~ 20 mm (0.6 ~ 0.8 in)

MAINTENANCE SPECIFICATIONS

Model	SRX250
Front Disc Brake:	
Type	Single
Disc Outside Dia. × Thickness	267 × 5.0 mm (10.5 × 0.196 in)
Pad Thickness Inner	5.0 mm (0.196 in)
<Limit>*	0.5 mm (0.0197 in)
Pad Thickness Outer	5.0 mm (0.196 in)
<Limit>*	0.5 mm (0.0197 in)
	
Master Cylinder Inside Dia.	12.7 mm (0.5 in)
Caliper Cylinder Inside Dia.	38.1 mm (1.5 in)
Brake Fluid Type	DOT #3
Rear Drum Brake:	
Type Rear	Leading trailing
Drum Inside Dia.	150 mm (5.90 in)
<Limit>	151 mm (5.94 in)
Lining Thickness	4 mm (0.16 in)
<Limit>	2 mm (0.08 in)
Shoe Spring Free Length	68 mm (2.7 in)
Brake Lever and Brake Pedal:	
Brake Lever Free Play	5 ~ 8 mm (0.2 ~ 0.3 in)
Brake Pedal Position	30 mm (1.2 in) (Below the top of the footrest)
Brake Pedal Free Play	20 ~ 30 mm (0.8 ~ 1.2 in)
Clutch Lever:	
Clutch Lever Free play	2 ~ 3 mm (0.08 ~ 0.12 in)

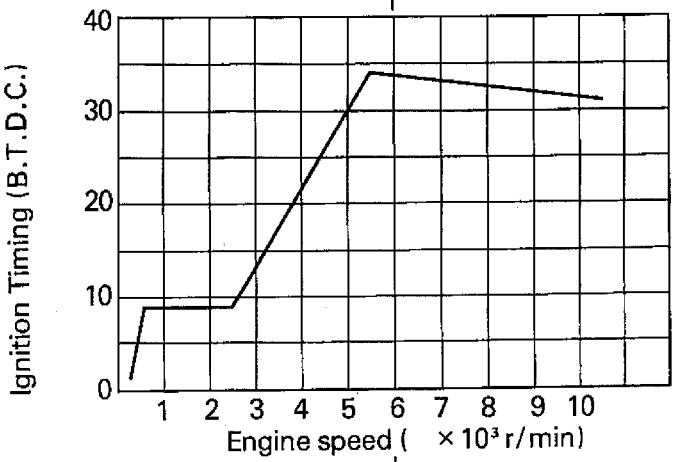
Chassis

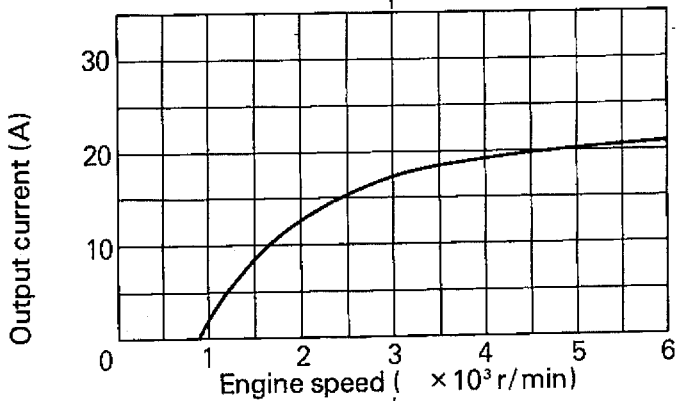
Tightening Torque:	Thread Size	Nm	m·kg	ft·lb	Remarks
Front axle	M12×1.25	74	7.4	53	
Steering crown & Inner tube	M 8×1.25	20	2.0	14	
Steering stem bolt	M14×1.25	54	5.4	39	
Handlebar & Steering crown	M 6×1.0	9	0.9	6.5	
Steering stem ring nut	M25×1.0	38	3.8	27	
Under bracket & Inner tube	M 8×1.25	20	2.0	14	
Engine mounting bolt					
Upper:	M 8×1.25	33	3.3	24	
Front (Upper):	M 8×1.25	33	3.3	24	
Front (Lower):	M 8×1.25	33	3.3	24	
Rear (Upper):	M 8×1.25	33	3.3	24	
Rear (Lower):	M 8×1.25	33	3.3	24	
Engine mounting bracket & Frame					
Front (Lower):	M 8×1.25	20	2.0	14	
Other:	M 8×1.25	33	3.3	24	
Pivot shaft	M14×1.5	90	9.0	65	
Rear shock absorber & Frame	M10×1.25	40	4.0	29	
Arm 1 & Arm 2	M 8×1.25	20	2.0	14	
Frame & Relay arm	M12×1.25	65	6.5	47	
Relay arm & Arm 1, 2	M14×1.25	65	6.5	47	
Rear axle	M14×1.5	107	10.7	78	Use cotter pin
Brake lever & Camshaft	M 6×1.0	10	1.0	7.2	
Rear driven sprocket	M 8×1.25	32	3.2	23	Use lock washer
Footrest	M 8×1.25	20	2.0	14	
Front fork cap bolt		23	2.3	17	Use O-ring
Front fork damper rod & Outer tube	M10×1.0	23	2.3	17	Apply LOCTITE
Fuel sender unit	M 5×0.8	4	0.4	2.9	
Front wheel & Brake disc	M 8×1.25	20	2.0	14	
Change pedal & Footrest	M 8×1.25	20	2.0	14	
Brake pedal axle & Muffler	M10×1.25	35	3.5	25	
Cowling stay & Frame	M 8×1.25	23	2.3	17	
Front brake master cylinder & Bracket	M 6×1.0	9	0.9	6.5	
Front brake master cylinder & Cap	M 5×0.8	2	0.2	1.4	
Brake hose & Union bolt	M10×1.25	26	2.6	19	
Brake bleed screw	M 8×1.25	6	0.6	4.3	
Brake caliper & Front fork	M10×1.25	35	3.5	25	

MAINTENANCE SPECIFICATIONS

Electrical

Model	SRX250
Voltage	12V
Ignition System: Ignition Timing (B.T.D.C.) Advanced Timing (B.T.D.C.) Advancer Type	 9° at 1,200 r/min 34° at 5,500 r/min Electrical
T.C.I.: Pickup Coil Resistance (Color) T.C.I. Unit-Model/ Manufacture	 10 Ω ± 15% at 20°C (68°F) (White/ Green — White/ Red) TID11-08/ HITACHI
Ignition Coil: -Model/ Manufacturer Primary Winding Resistance Secondary Winding Resistance	 CM11-61/ HITACHI 2.7 Ω ± 10% at 20°C (68°F) 13.2 KΩ ± 20% at 20°C (68°F)
Charging System/ Type	A.C. Magneto
A.C. Generator: Model/ Manufacturer Normal Output	 FL118-07/ HITACHI 14V, 15A at 5,000 r/min





Model	SRX250
Charging Coil Resistance (Color)	0.44Ω ± 15% at 20°C (68°F) (White — White)
Voltage Regulator: -Type -Model/ Manufacture -No Load Regulated Voltage	 Semi Conductor-Short Circuit Type SH235-12B/ SHINDENGEN 14.0 ~ 15.0V
Rectifier: -Model/ Manufacturer -Capacity -Withstand Voltage	 SH235-12B/ SHINDENGEN 20A 200V
Battery: Capacity Specific Gravity	 12V 12AH 1.280
Electric Starter System: Type Starter Motor-Model/ Manufacturer -Out put Armature Coil Resistance Brush-Overall Length <Limit> -Spring Pressure Commutator Dia. <Wear Limit> -Mica Undercut (Width × Depth)	 Constant mesh type SM7258/ MITSUBA 0.4 kw 0.014Ω ± 10% at 20°C (68°F) 11.0 mm (0.41 in) <5.0 mm (0.20 in)> 400 ~ 600g (14.1 ~ 21.2oz) 23.0 mm (0.91 in) <22.0 mm (0.87 in)> 0.8 × 1.8 mm (0.03 × 0.07 in)
Starter Relay Model/ Manufacturer Amperage Rating Coil Winding Resistance	 A104-132/ HITACHI 100A 3.4Ω ± 10% at 20°C (68°F)
Horn: Type/ Quantity Model/ Manufacturer Maximum Amperage	 Plain type MF-12/ NIKKO 1.5A
Flasher Relay: Type Model/ Manufacturer Self Cencelling Device Flasher Frequency Wattage	 Condenser type FZ257SD/ NIPPONDENSO No 75 ~ 95.0 cycle/ min 27W × 2 + 3.4W

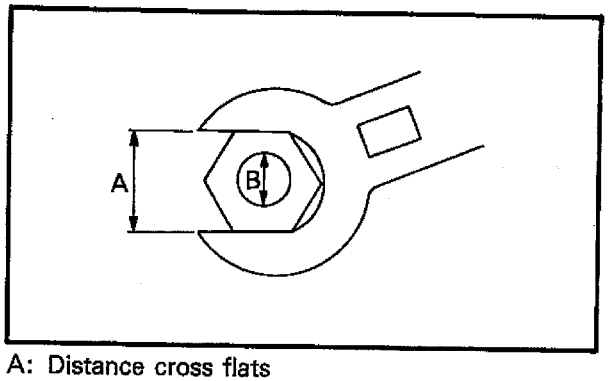
MAINTENANCE SPECIFICATIONS

Model	SRX250
Fuel Gauge: Model/Manufacturer Sender Unit Resistance Full Empty	 51Y/NIPPONDENSO 10Ω ± 10% at 20°C (68°F) 90Ω ± 15% at 20°C (68°F)
Starting Circuit Cut off Relay: Model/Manufacturer Coil Winding Resistance Diode	 12R/TATEISHI (OMRON) 75Ω ± 10% at 20°C (68°F) Yes
Main Fuse: Type Amperage for Individual Circuit/ Quantity Main	 Circuit Breaker 20A × 1

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 (Nut)	B (Bolt)	General torque specifications		
		Nm	m•kg	ft•lb
10 mm	6 mm	6	0.6	4.3
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

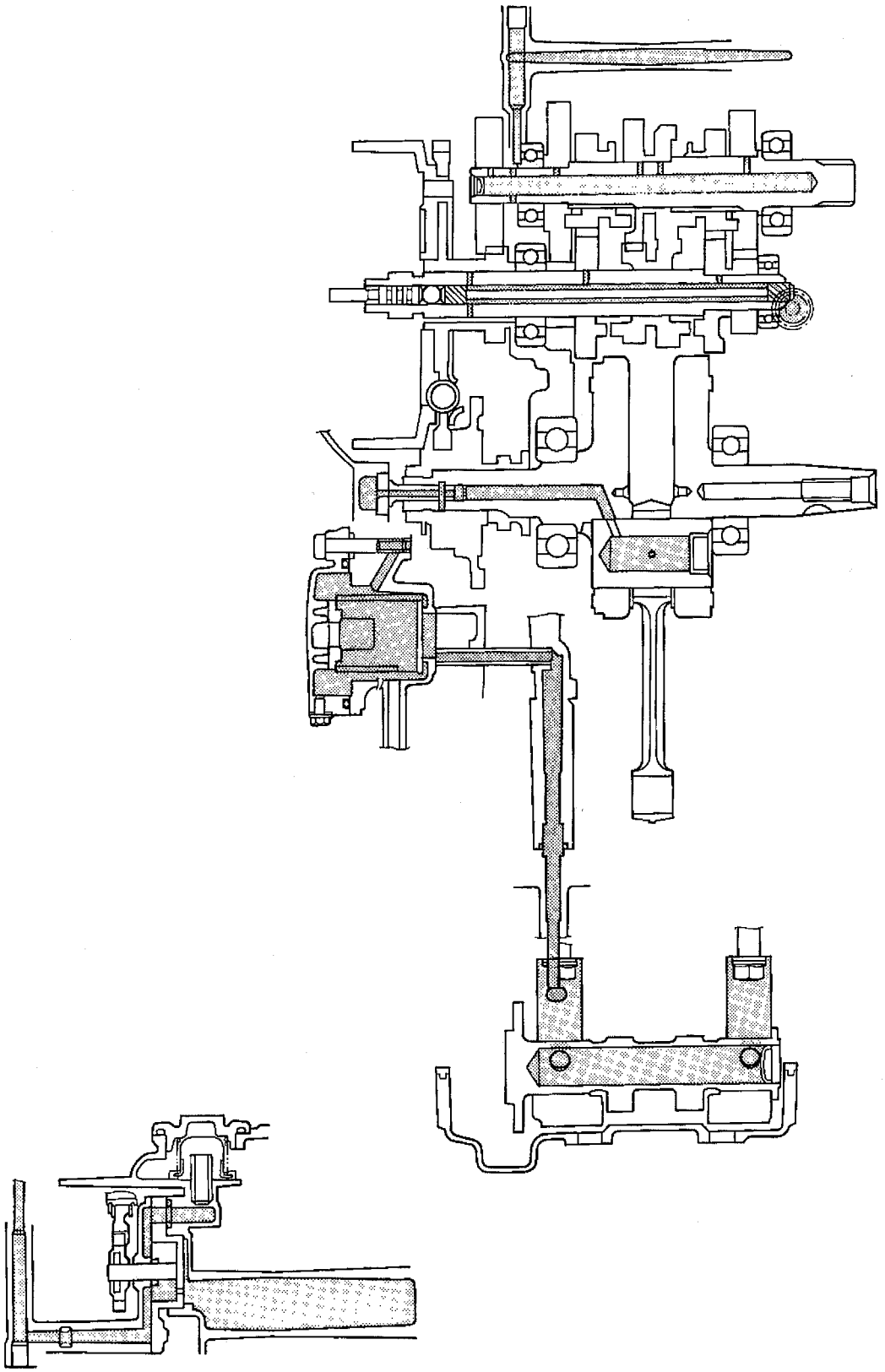


A: Distance cross flats
B: Outside thread diameter

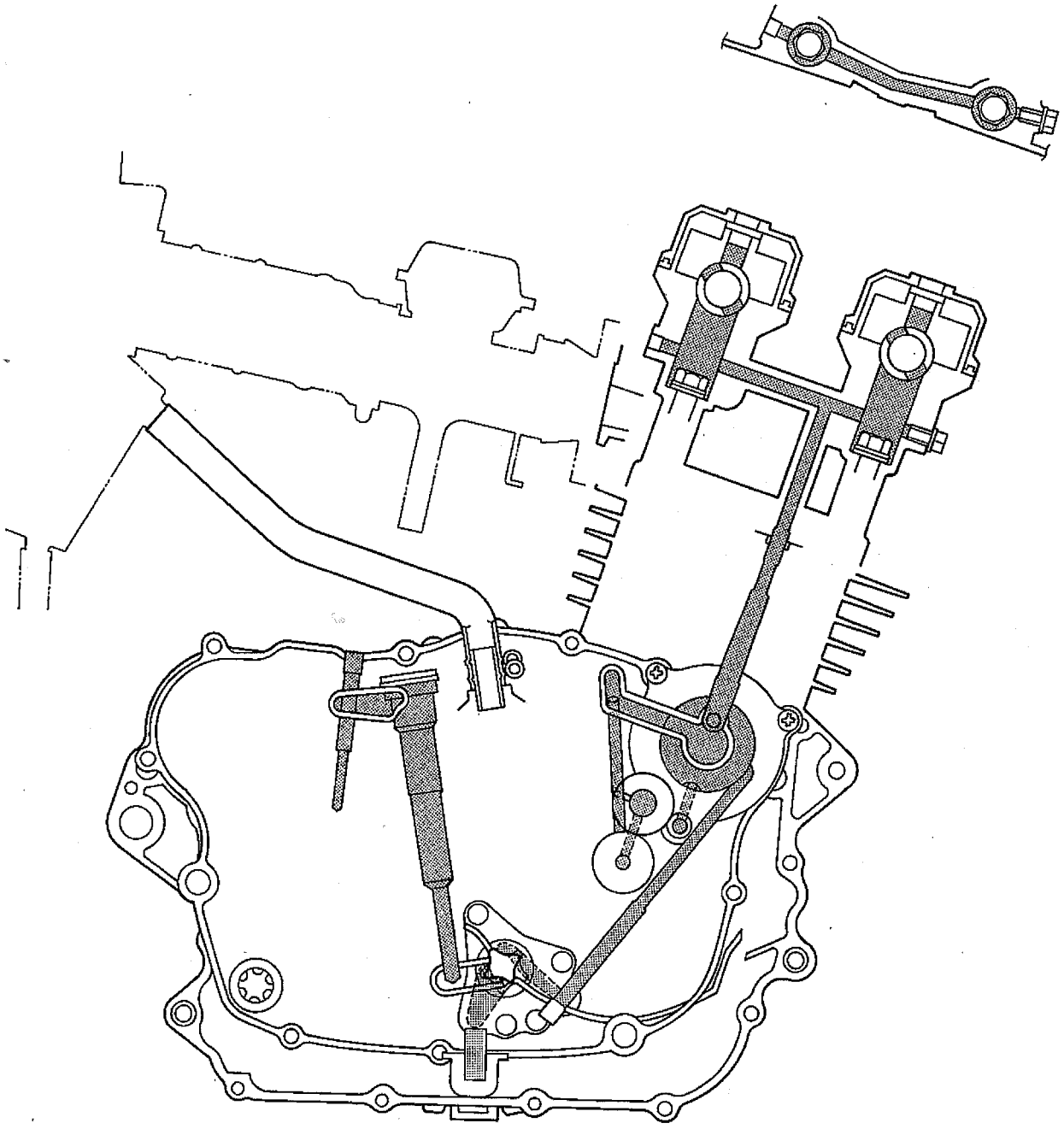
DEFINITION OF UNITS

Unit	Read	Definition	Measure
mm cm	millimeter 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 millimeter	N/m^2 N/mm	Pressure Spring rate
L cm^3	Liter Cubic centimeter	—	Volume or Capacity
r/min	Rotation per minute	—	Engine Speed

LUBRICATION DIAGRAMS (1)



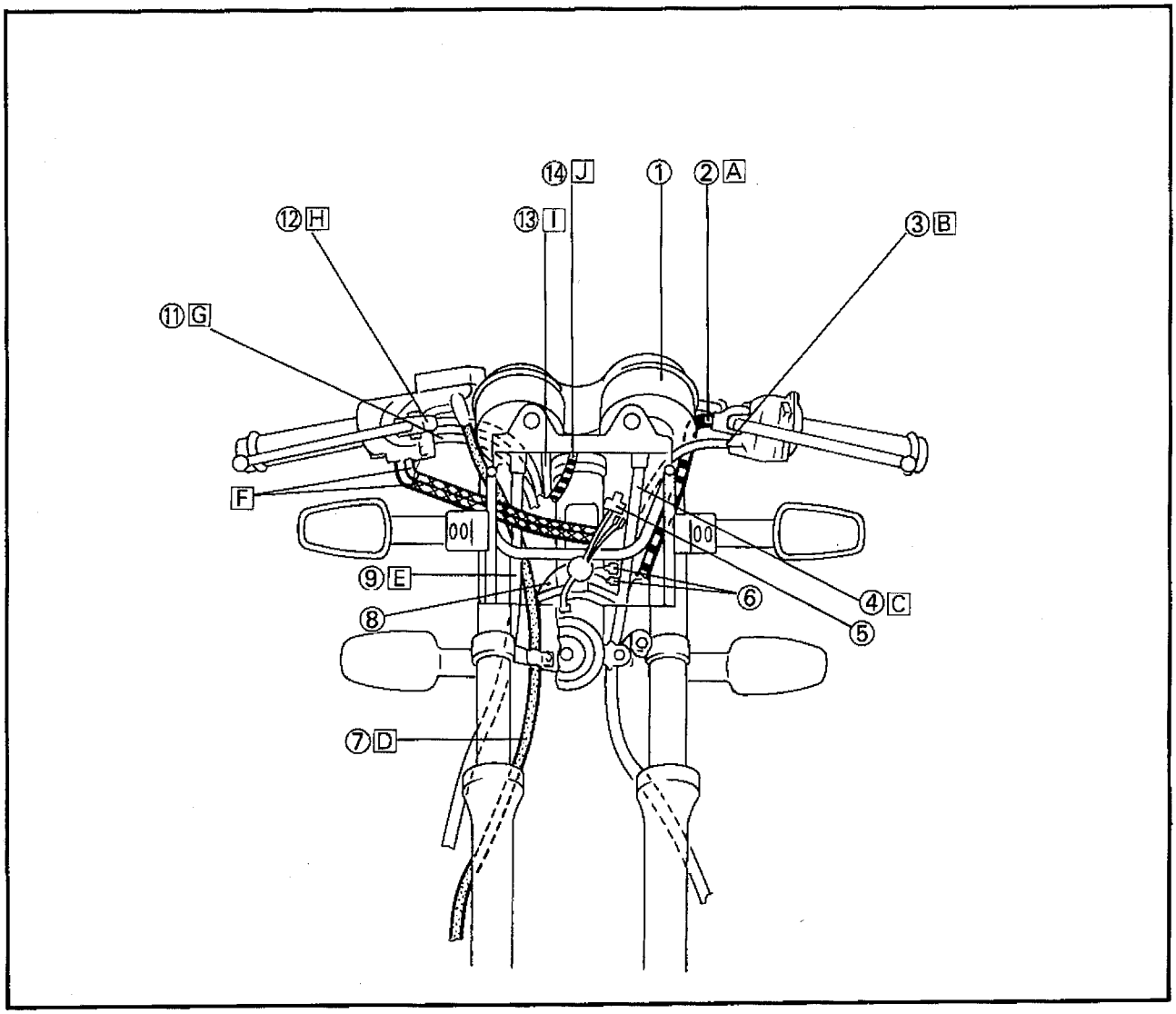
LUBRICATION DIAGRAMS (2)



CABLE ROUTING

① Meter assembly
② Clutch cable:
③ Handlebar switch lead (L):
④ Speedometer cable:
⑤ To the position lamp
⑥ To the front flasher light
⑦ Brake hose:
⑧ Wire harness
⑨ Tachometer cable:
⑩ Throttle cable 1 and 2:
⑪ Handlebar switch lead (R):
⑫ Front brake switch lead:
⑬ Meter leads:
⑭ Main switch lead:

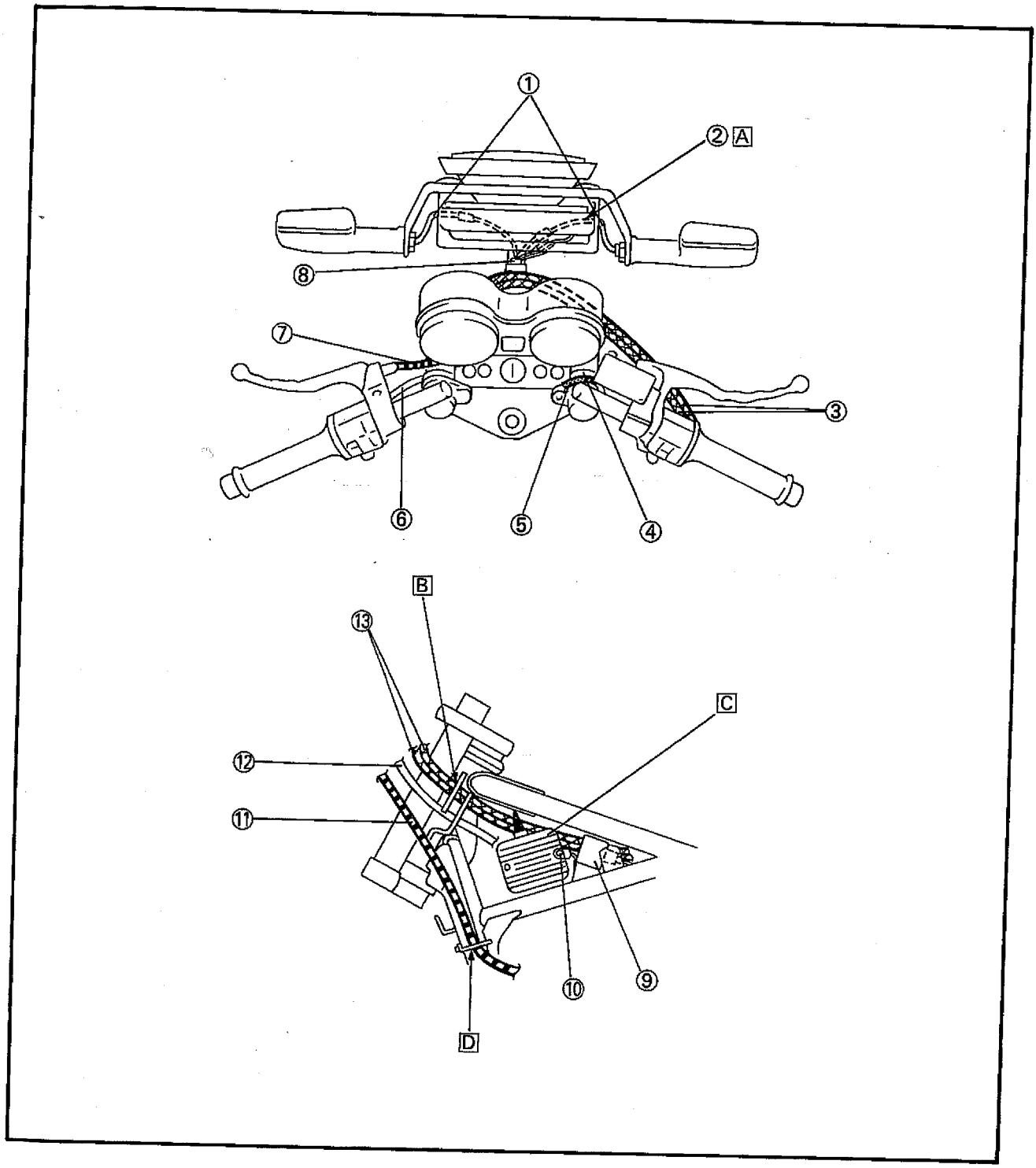
[A] Route it in front of the front forks to the right side of the cylinder head and the rear of the under-bracket.
[B] Pass it from the left side of the meter and through the cable guide on the steering head pipe, and connect it on the inner side of the side cover 3.
[C] Route it behind the horn stay.
[D] Route it in front of the front forks and behind the throttle cable and tachometer cable. Next, clamp it to the right front of the under-bracket and route it in front of the front forks.
[E] Route in front of the break hose and behind the underbracket, then route it through the cable guide on the down-tube R.
[F] Route it in front of the front forks, brake hose, and tachometer cable, and route it on the left side of head pipe, then insert into side cover 3.
[G] Route it on the right side of the meter and the right side of the steering head pipe, and connect it inside the side cover 4.
[H] Route it on the right side of the meter and the right side of the steering head pipe, and connect it inside the side cover 4.
[I] Route them on the right side of the steering head pipe and connect inside the side cover.
[J] Route it on the right side of the steering head pipe and connect it inside the side cover 4.



CABLE ROUTING

① Front flasher light lead
② Flasher lights L, R
③ Throttle cable 1, 2
④ Front brake switch
⑤ Handlebar switch lead (R)
⑥ Handlebar switch lead (L)
⑦ Clutch cable
⑧ Wire harness
⑨ Flasher relay
⑩ Ground
⑪ Clutch cable
⑫ Handlebar switch lead (L)
⑬ Throttle cable

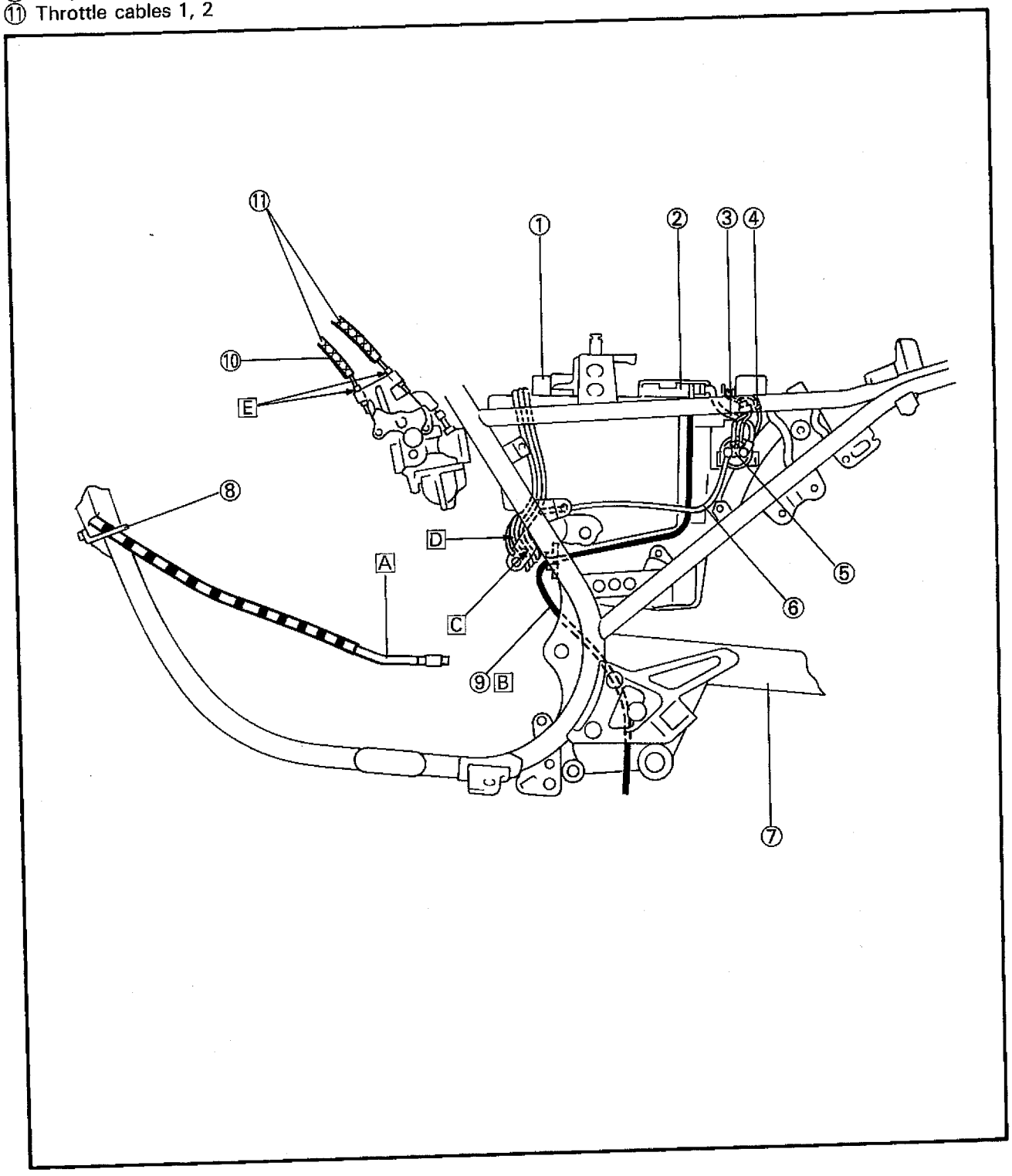
[A] As shown, install the flasher lead in the gap between the cowling stay 1 and headlight assembly.
[B] Pass the throttle cable through the clamp.
[C] Turn the rectifier-regulator lead upward.
[D] Pass the clutch cable through the cable guide.



CABLE ROUTING

① Ignitor unit
② Battery
③ Battery plus lead
④ To the non-fuse breaker
⑤ Starter switch
⑥ Starter motor lead
⑦ Rear arm
⑧ Cable guide
⑨ Battery breather pipe
⑩ Gray marking
⑪ Throttle cables 1, 2

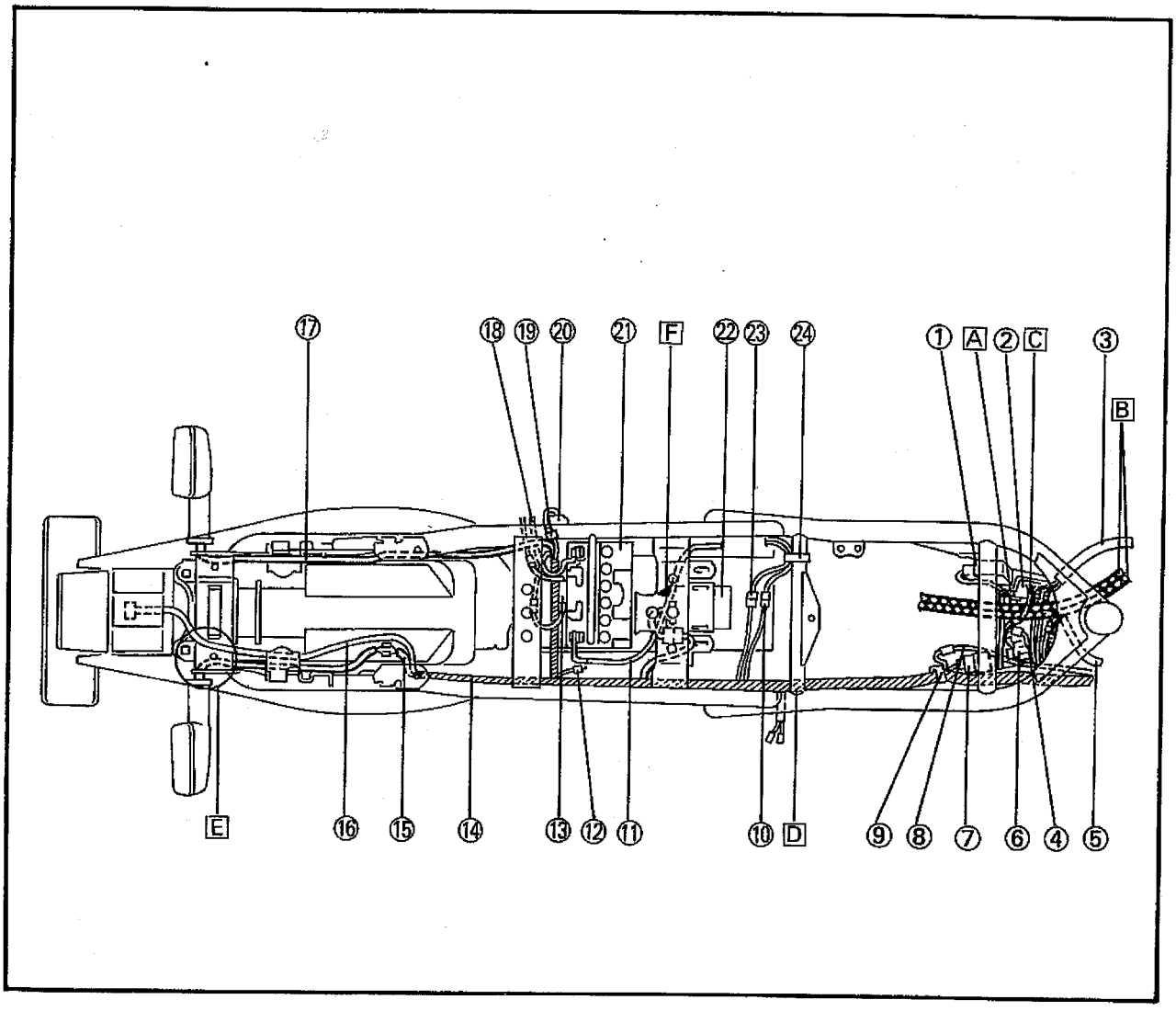
[A] Set the clutch cable end so that the clutch cable can pass straight through the clamp.
[B] Pass it through the clamp and route it between the rear cushion and rear arm and leave it hanging.
[C] Route this portion behind the engine stay.
[D] Secure the three leads and starter motor lead to the cross pipe with the band.
[E] Clamp the throttle cables at the centers of the threaded portions.



CABLE ROUTING

① Flasher relay
② Rectifier/Regulator
③ Handlebar switch lead
④ Ignition coil lead
⑤ Main switch lead
⑥ Ignition coil
⑦ Starting circuit cut-off relay
⑧ Front brake switch lead
⑨ Clamp
⑩ 6P coupler
⑪ Battery ground lead
⑫ To the fuel tank
⑬ Non-fuse breaker sender
⑭ Wire harness
⑮ Rear flasher light lead (R)
⑯ Taillight lead
⑰ Rear flasher light lead (L)
⑱ Battery plus lead
⑲ 7P coupler
⑳ Starter switch
㉑ Battery
㉒ Igniter unit
㉓ 3P coupler
㉔ Band

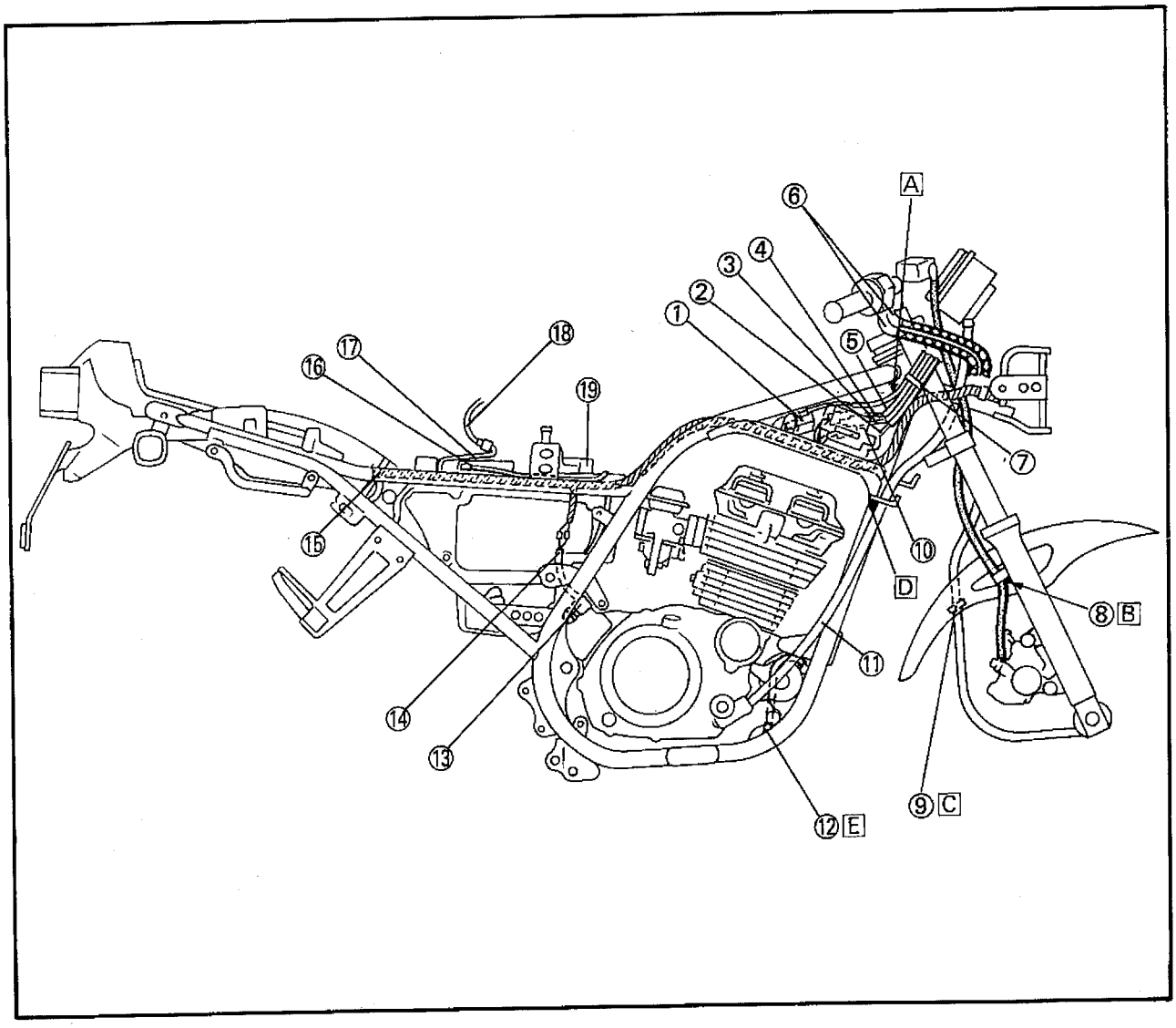
[A] Secure the ground lead, together with the regulator.
[B] Route the throttle cables 1 and 2 behind the rectifier-regulator and over the wire harness. (Excluding the rectifier lead)
[C] Route over the throttle cables 1 and 2 and connect the lead.
[D] Align the white tape on the wire harness with the cross pipe.
[E] Make sure this portion is not pinched by the rear fender cover.
[F] Route the negative lead under the igniter unit.

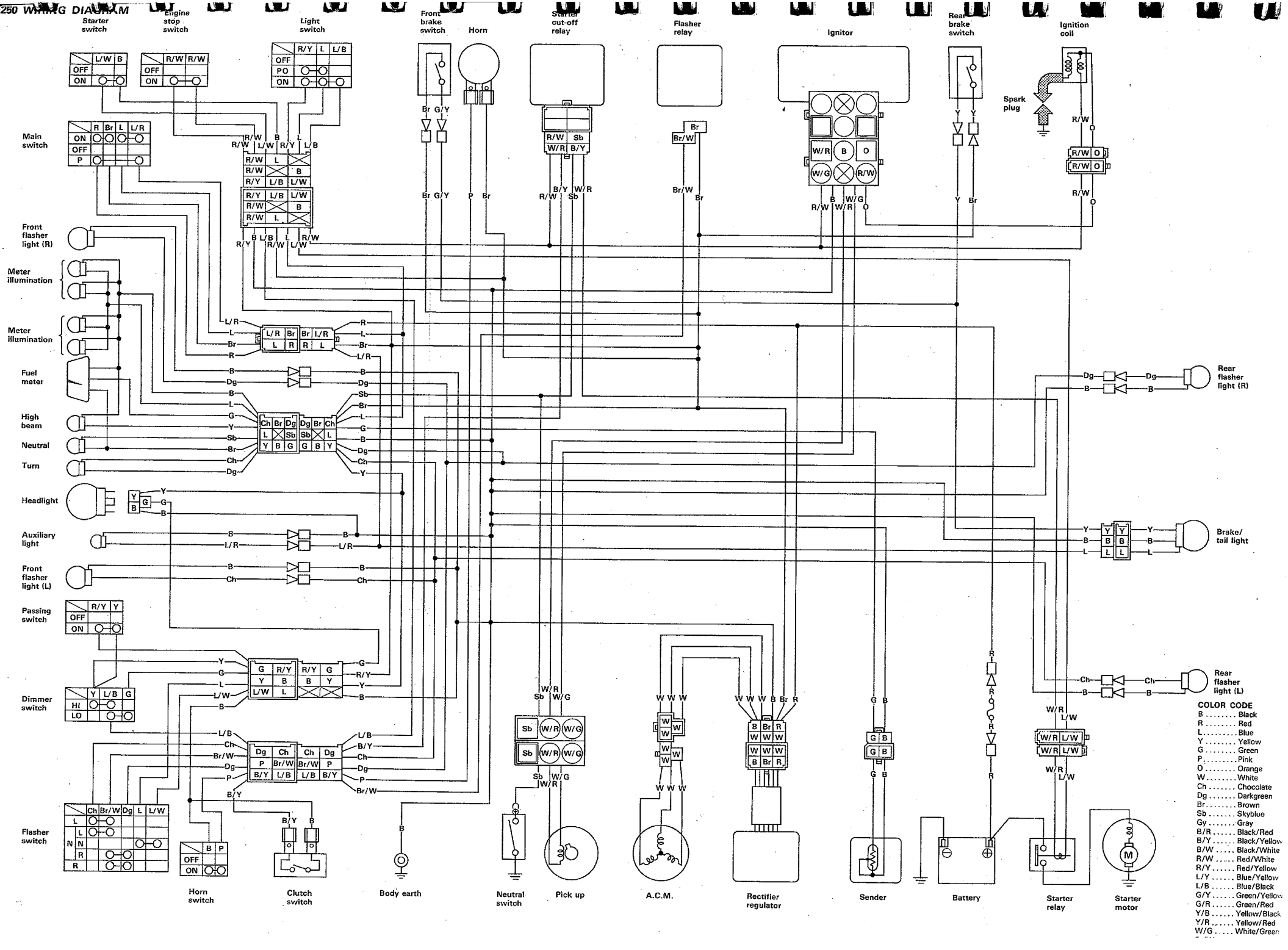


CABLE ROUTING

① Starting circuit cut-off relay
② Main switch lead
③ Handlebar switch lead (R)
④ Meter lead
⑤ Front brake switch lead
⑥ Throttle cable 1, 2
⑦ Band
⑧ Brake hose:
⑨ Speedometer cable:
⑩ Ignition coil
⑪ Tachometer cable
⑫ Starter motor lead
⑬ Rear brake switch
⑭ Rear brake switch lead
⑮ Wire harness
⑯ Battery
⑰ Battery negative lead
⑱ To the fuel tank sender
⑲ Igniter unit

[A] Insert the cables into the opening of side cover 4.
[B] Clamp to the outer tube.
[C] Route the cable between the under-bracket and horn and pass through the cable guide.
[D] Pass the tachometer cable through the cable guide.
[E] Route the cord under the engine hanger.




Starter switch
Engine stop switch
Light switch
Front brake switch
Horn
Starter cut-off relay
Flasher relay
Ignitor
Rear brake switch
Ignition coil
Spark plug
Main switch
Front flasher light (R)
Meter illumination
Meter illumination
Fuel meter
High beam
Neutral
Turn
Headlight
Auxiliary light
Front flasher light (L)
Passing switch
Dimmer switch
Flasher switch
Horn switch
Clutch switch
Body earth
Neutral switch
Pick up
A.C.M.
Rectifier regulator
Sender
Battery
Starter relay
Starter motor
Rear flasher light (R)
Brake/ tail light
Rear flasher light (L)
COLOR CODE
B ..... Black
R ..... Red
L ..... Blue
Y ..... Yellow
G ..... Green
P ..... Pink
O ..... Orange
W ..... White
Ch ..... Chocolate
Dg ..... Darkgreen
Br ..... Brown
Sb ..... Skyblue
Gy ..... Gray
B/R ..... Black/Red
B/Y ..... Black/Yellow
B/W ..... Black/White
R/W ..... Red/White
R/Y ..... Red/Yellow
L/Y ..... Blue/Yellow
L/B ..... Blue/Black
G/Y ..... Green/Yellow
G/R ..... Green/Red
Y/B ..... Yellow/Black
Y/R ..... Yellow/Red
W/G ..... White/Green