SUZUKI

AY50

SERVICE MANUAL

99500-10457-01E

FOREWORD

This manual contains an introductory description on the SUZUKI AY50/50W and procedures for its inspection/service and overhaul of its main components.
Other information considered as generally known is not included.
Read the GENERAL INFORMATION section to familiarize yourself with the motorcycle and its maintenance. Use this section as well as other sections as a guide for proper inspection and service. This manual will help you know the motorcycle better so that you can assure your customers of fast and reliable service.

- ** This manual has been prepared on the basis of the latest specifications at the time of publication. If modifications have been made since then, differences may exist between the content of this manual and the actual motorcycle.*
- ** Illustrations in this manual are used to show the basic principles of operation and work procedures. They may not represent the actual motorcycle exactly in detail.*
- ** This manual is written for persons who have enough knowledge, skills and tools, including special tools, for servicing SUZUKI motorcycles. If you do not have the proper knowledge and tools, ask your authorized SUZUKI motorcycle dealer to help you.*

⚠ WARNING

Inexperienced mechanics or mechanics without the proper tools and equipment may not be able to properly perform the services described in this manual. Improper repair may result in injury to the mechanic and may render the motorcycle unsafe for the rider and passenger.

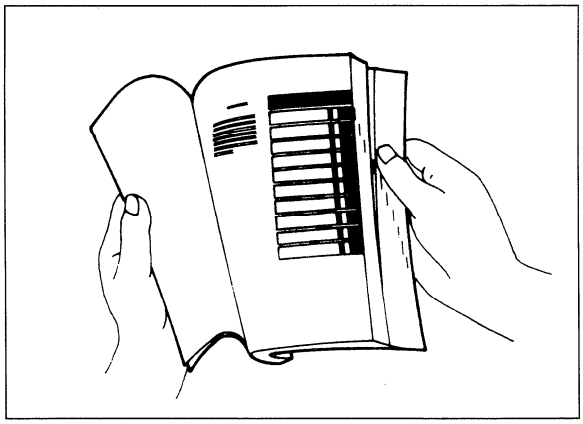
SUZUKI MOTOR ESPAÑA, S. A.

GROUP INDEX

HOW TO USE THIS MANUAL

TO LOCATE WHAT YOU ARE LOOKING FOR:

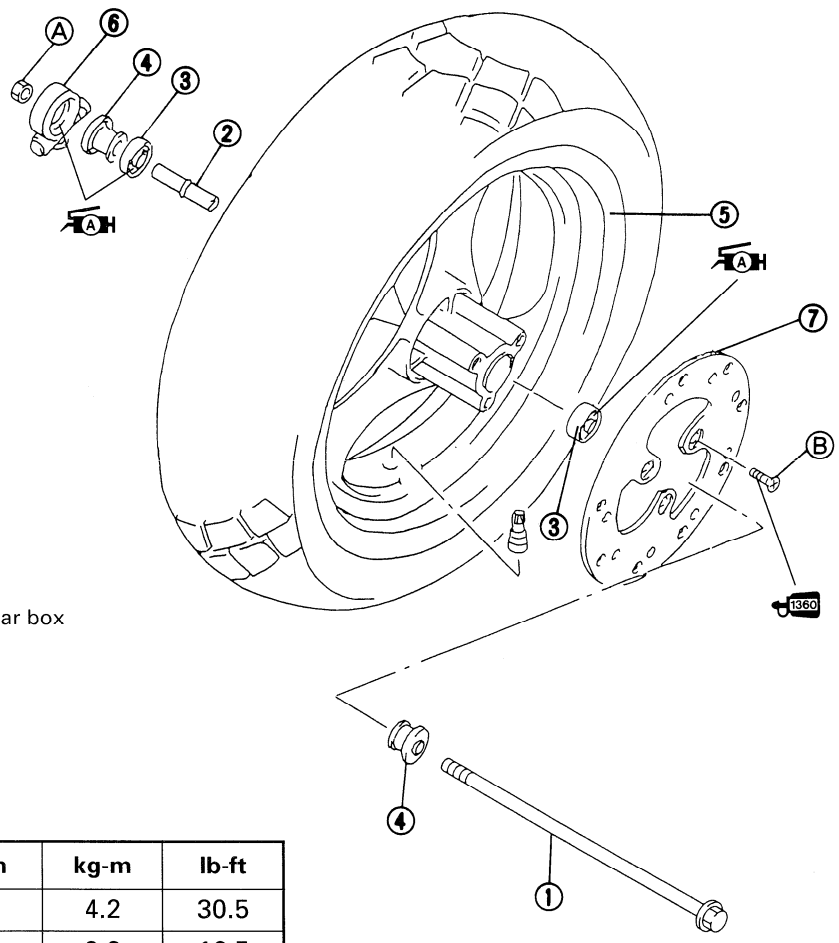
1. The text of this manual is divided into sections.
2. The section titles are listed in the GROUP INDEX.
3. Holding the manual as shown at the right will allow you to find the first page of the section easily.
4. The contents are listed on the first page of each section to help you find the item and page you need.



COMPONENT PARTS AND WORK TO BE DONE

Under the name of each system or unit, is its exploded view. Work instructions and other service information such as the tightening torque, lubricating points and locking agent points, are provided.

Example: Front wheel



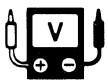
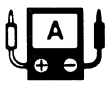
① Front axle
② Spacer
③ Bearing
④ Spacer
⑤ Front wheel
⑥ Speedometer gear box
⑦ Brake disc

Ⓐ Front axle nut
Ⓑ Brake disc bolt

ITEM	N·m	kg-m	lb-ft
Ⓐ	42	4.2	30.5
Ⓑ	23	2.3	16.5

SYMBOL

Listed in the table below are the symbols indicating instructions and other information necessary for servicing. The meaning of each symbol is also included in the table.

SYMBOL	DEFINITION	SYMBOL	DEFINITION
	Torque control required. Data beside it indicates specified torque.		Apply THREAD LOCK SUPER "1360". 99000-32130
	Apply oil. Use engine oil unless otherwise specified.		Apply or use brake fluid.
	Apply SUZUKI SUPER GREASE "A". 99000-25010		Measure in voltage range.
	Apply SUZUKI MOLY PASTE. 99000-25140		Measure in resistance range.
	Apply SUZUKI BOND "1207B". 99000-31140		Measure in current range.
	Apply THREAD LOCK "1342". 99000-32050		Use special tool.
	Apply THREAD LOCK SUPER "1322". 99000-32110		Use engine coolant. 99000-99032-11X

GENERAL INFORMATION

1

CONTENTS

WARNING/CAUTION/NOTE

Please read this manual and follow its instructions carefully. To emphasize special information, the symbol and the words WARNING, CAUTION and NOTE have special meanings. Pay special attention to the messages highlighted by these signal words.

⚠ WARNING

Indicates a potential hazard that could result in death or injury.

⚠ CAUTION

Indicates a potential hazard that could result in motorcycle damage.

NOTE:

Indicates special information to make maintenance easier or instructions clearer.

Please note, however, that the warnings and cautions contained in this manual cannot possibly cover all potential hazards relating to the servicing, or lack of servicing, of the motorcycle. In addition to the WARNINGS and CAUTIONS stated, you must use good judgement and basic mechanical safety principles. If you are unsure about how to perform a particular service operation, ask a more experienced mechanic for advice.

GENERAL PRECAUTIONS

⚠ WARNING

* **Proper service and repair procedures are important for the safety of the service mechanic and the safety and reliability of the motorcycle.**
* **When two or more persons work together, pay attention to the safety of each other.**
* **When it is necessary to run the engine indoors, make sure that exhaust gas is forced outdoors.**
* **When working with toxic or flammable materials, make sure that the area you work in is well ventilated and that you follow all of the manufacturer's instructions.**
* **Never use gasoline as a cleaning solvent.**
* **To avoid getting burned, do not touch the engine, engine oil, radiator and exhaust system until they have cooled.**
* **After servicing the fuel, oil, engine coolant, exhaust or brake systems, check all of the lines and fittings related to the system for leaks.**

⚠ CAUTION

* If parts replacement is necessary, replace the parts with Suzuki Genuine Parts or their equivalent.
* When removing parts that are to be reused, keep them arranged in an orderly manner so that they may be reinstalled in the proper order.
* Be sure to use special tools when instructed.
* Make sure that all parts used in reassembly are clean. Lubricate them when specified.
* Use the specified lubricant, bond, or sealant.
* When removing the battery, disconnect the negative cable first and then the positive cable.
* When reconnecting the battery, connect the positive cable first and then the negative cable, and cover the positive terminal with the terminal cover.
* When performing service to electrical parts, disconnect the battery negative cable unless the service procedure requires the battery power.
* When tightening cylinder head and crankcase bolts and nuts, tighten the larger sizes first. Always tighten the bolts and nuts from the inside working out, in a crisscross pattern.
* Whenever you remove oil seals, gaskets, packing, O-rings, self-locking nuts, locking washers, cotter pins, circlips, and certain other parts as specified, be sure to replace them with new ones. Also, before installing these new parts, be sure to remove any left over material from the mating surfaces.
* Never reuse a circlip. When installing a new circlip, take care not to expand the end gap larger than required to slip the circlip over the shaft. After installing a circlip, always ensure that it is completely seated in its groove and securely fitted.
* Use a torque wrench to tighten fasteners to the specified torque. Wipe off grease and oil if a thread is smeared with them.
* After reassembling, check parts for tightness and proper operation.

* To protect the environment, do not unlawfully dispose of used motor oil, engine coolant, batteries, and tires.
* To protect the earth's natural resources, properly dispose of used motorcycles and parts.

SUZUKI AY50V/50WV ('97-MODEL)

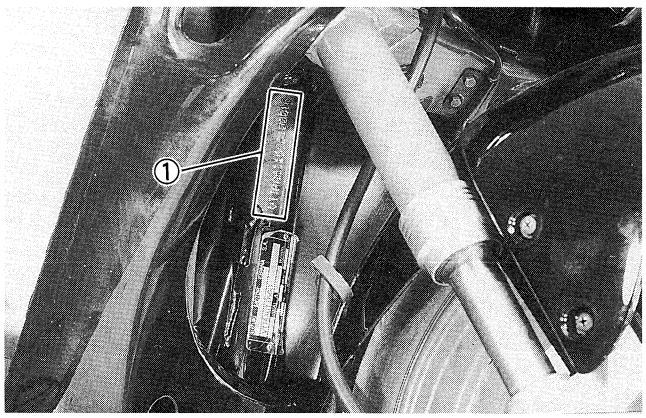
RIGHT SIDE

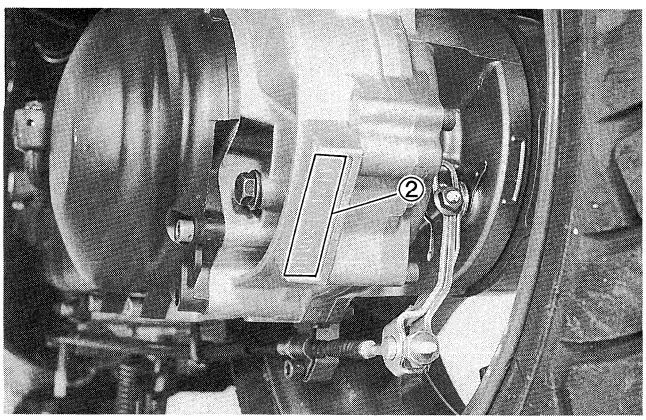
LEFT SIDE

* Difference between photographs and the actual motorcycles depends on the markets.

SERIAL NUMBER LOCATION

The frame serial number or V.I.N. (Vehicle Identification Number) ① is stamped on the right side of the steering head pipe. The engine serial number ② is located on the end of the crankcase. These numbers are required especially for registering the machine and ordering spare parts.





FUEL, OIL AND ENGINE COOLANT RECOMMENDATIONS

Be sure to use the specified fuel and oils. Fuel and oil specifications are listed below.

FUEL

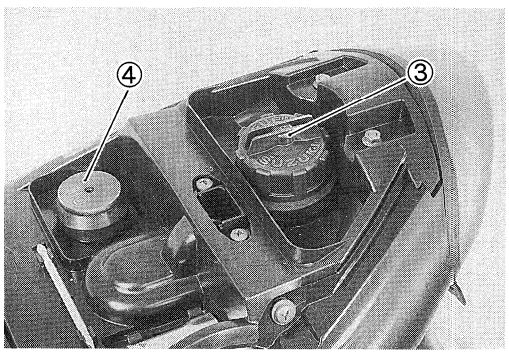
Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.

③ Fuel tank cap

ENGINE OIL

Use SUZUKI CCI SUPER OIL or an equivalent good quality synthetic based 2-stroke oil rated FC under the JASO classification.

④ Engine oil tank cap



FINAL GEAR OIL
Use a good quality SAE 10W/40 multi-grade motor oil.

BRAKE FLUID

Specification and classification: DOT 4

⚠ WARNING

This motorcycle uses a glycol-based brake fluid. Do not use or mix different types of brake fluid such as silicone-based and petroleum-based fluids for refilling the system, otherwise serious damage will result to the brake system.
Never use any brake fluid taken from old, used or unsealed containers.
Never re-use brake fluid left over from the last servicing or which has been stored for a long period of time.

ANTI-FREEZE AND DISTILLED WATER
Use anti-freeze which is designed for use in aluminum radiators. Mix only distilled water with the anti-freeze. Other types of water can corrode and clog the aluminum radiator.

ENGINE COOLANT
Engine coolant performs as a corrosion and rust inhibitor, as well as an anti-freezing solution. Therefore, always use engine coolant regardless of if the atmospheric temperature in your area does not go below the freezing point.
Suzuki recommends the use of SUZUKI COOLANT anti-freeze. If this is not available, use an equivalent anti-freeze which is compatible with an aluminum radiator.

COOLANT MIXTURE RATIO
For engine coolant mixture information, refer to the cooling system section on page 5-2.

Solution capacity (total): 1 200 ml (1.1 lmp qt)

⚠ CAUTION

The percentage of anti-freeze in the coolant, should be between 50 ~ 60%. If the percentage of anti-freeze is above or below this range the coolant's anti-freezing, as well its rust inhibiting capabilities, will be reduced. Always keep the anti-freeze content above 50% even though the atmospheric temperature might not go below the freezing point.

BREAK-IN PROCEDURES

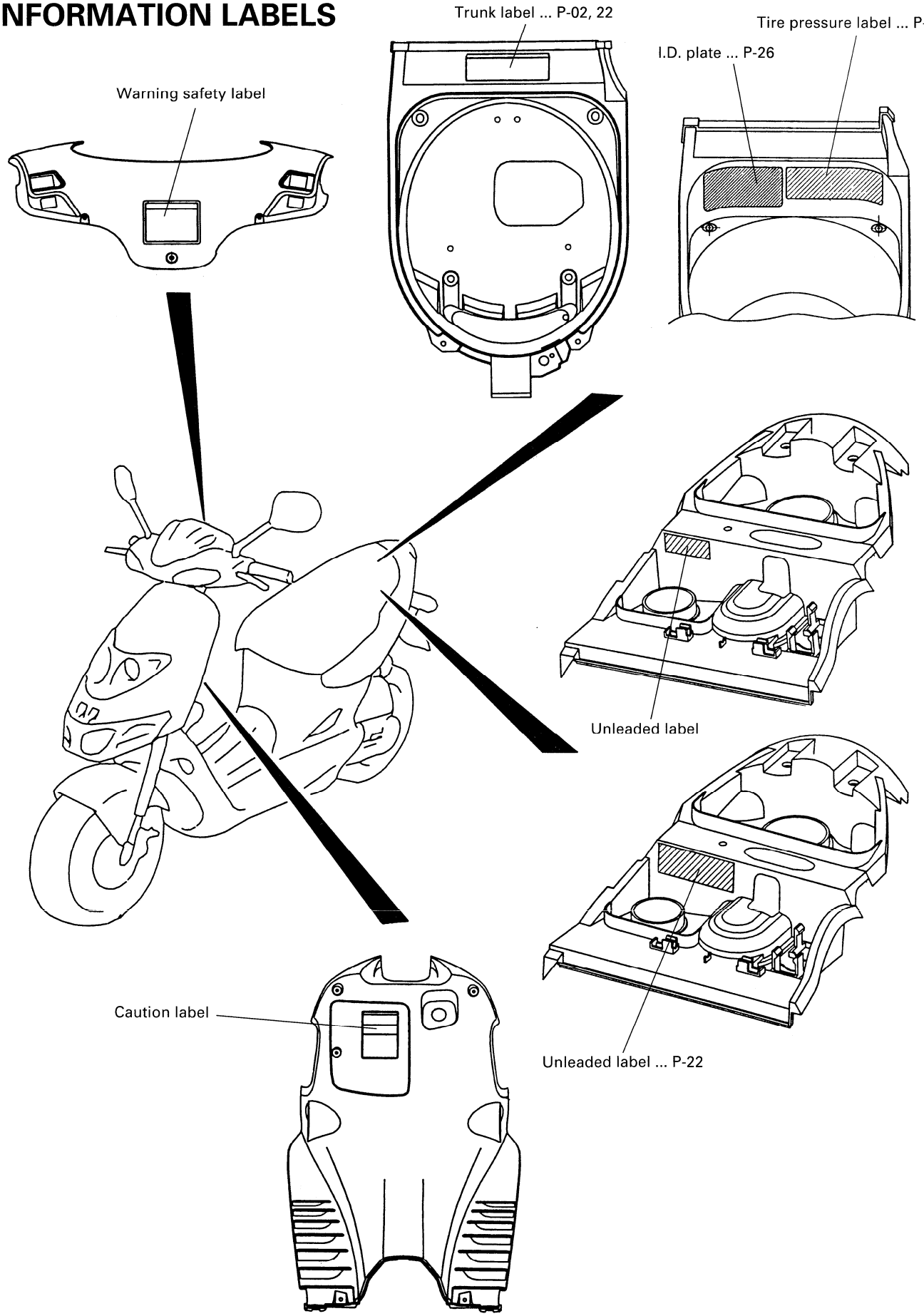
During manufacturing only the best possible materials are used and all machined parts are finished to a very high standard. It is still necessary to allow the moving parts to "BREAK-IN" before subjecting the engine to maximum stresses. The future performance and reliability of the engine depends on the care and restraint exercised during its early life. Refer to the following throttle position recommendations.

- Keep to these break-in throttle positions.

Initial 800 km: Less than $^1/_2$ throttle
Up to 1 600 km: Less than $^3/_4$ throttle

- Upon reaching an odometer reading of 1 600 km you can subject the motorcycle to full throttle operation, for short periods of time.

INFORMATION LABELS



SPECIFICATIONS
AY50

DIMENSIONS AND DRY MASS
Overall length.....1 885 mm (74.2 in) ... P-39
1 880 mm (74.0 in) ... P-22, 26
1 865 mm (73.4 in) ... The others
Overall width..... 650 mm (25.6 in)
Overall height.....1 125 mm (44.3 in)
Wheelbase.....1 260 mm (49.6 in)
Ground clearance ... 105 mm (4.1 in) ... P-04, 22
120 mm (4.7 in) ... The others
Seat height ..... 790 mm (31.1 in)
Dry mass..... 77 kg (169 lbs)

ENGINE
Type.....Two-stroke, forced air-cooled
Intake system .....Reed valve
Number of cylinders 1
Bore.....41.0 mm (1.614 in)
Stroke.....37.4 mm (1.472 in)
Piston displacement ....49 cm^3 (3.0 cu. in)
Corrected compression ratio.....6.7 : 1 ... P-02, 22
7.4 : 1 ... The others
Carburetor .....KEIHIN PWS12 ... P-34
KEIHIN PWS14 ... The others
Air cleaner .....Polyurethane foam element
Starter system.....Electric and kick
Lubrication system .....SUZUKI "CCI"

TRANSMISSION
Clutch.....Dry shoe, automatic, centrifugal type
Gearshifting.....Automatic, variable ratio
Gear ratios, variable.....Variable reduction ratio
(2.768—0.871)
Final reduction ratio.....12.800
(51/15) × (64/17) ... P-26, 34
14.960
(51/15) × (66/15) ... The others
Drive system .....V-belt drive

CHASSIS
Front suspension ....Inverted telescopic, coil spring
Rear suspension .....Swingarm type, coil spring, oil damped
Steering angle.....45° (right & left)
Caster.....25°18'
Trail .....76.7 mm (3.0 in)
Turning radius.....1.9 m (6.2 ft)
Front brake .....Disc brake
Rear brake .....Internal expanding
Front tire size.....120/70-12 51J
Rear tire size.....130/70-12 56J

ELECTRICAL
Ignition type .....Electronic ignition (CDI)
Ignition timing.....14° B.T.D.C. at 4 000 r/min
Spark plug .....NGK BPR6HS, ND W20FPR-U or BOSCH WR7BC
Battery .....12V 14.4 kC (4Ah)/10HR ... P-53
12V 10.8 kC (3Ah)/10HR ... The others
Generator .....Magneto
Fuse.....10A
Headlight .....12V 15W × 2
Brake light/taillight 12V 21/5W
Turn signal light.....12V 10W

CAPACITIES
Fuel tank .....6.8 L (1.5 Imp gal)
Engine oil tank .....1.2 L (1.1 Imp qt)
Final gear oil.....130 ml (4.6 Imp oz)

* These specifications are subject to change without notice.

AY50W

DIMENSIONS AND DRY MASS

Overall length ..... 1 880 mm (74.0 in) ... P-22, 26
1 865 mm (73.4 in) ... The others
Overall width ..... 650 mm (25.6 in)
Overall height ..... 1 125 mm (44.3 in)
Wheelbase ..... 1 260 mm (49.6 in)
Ground clearance... 105 mm (4.1 in) ... P-04, 22
120 mm (4.7 in) ... The others
Seat height ..... 790 mm (31.1 in)
Dry mass ..... 80 kg (176 lbs)

ENGINE

Type ..... Two-stroke, liquid-cooled
Intake system ..... Reed valve
Number of cylinders 1
Bore ..... 41.0 mm (1.614 in)
Stroke ..... 37.4 mm (1.472 in)
Piston displacement .... 49 cm^3 (3.0 cu. in)
Corrected compression ratio ..... 7.8 : 1 ... P-34
8.0 : 1 ... P-26
8.1 : 1 ... The others
Carburetor ..... KEIHIN PWS12 ... P-34
KEIHIN PWS14 ... The others
Air cleaner ..... Polyurethane foam element
Starter system ..... Electric and kick
Lubrication system ..... SUZUKI "CCI"

TRANSMISSION

Clutch ..... Dry shoe, automatic, centrifugal type
Gearshifting ..... Automatic, variable ratio
Gear ratios, variable ..... Variable reduction ratio (2.768—0.871)
Final reduction ratio 11.900
(51/15) × (63/18) ... P-26, 34
14.960
(51/15) × (66/15) ... The others
Drive system ..... V-belt drive

CHASSIS

Front suspension .... Inverted telescopic, coil spring
Rear suspension ..... Swingarm type, coil spring, oil damped
Steering angle ..... 45° (right & left)
Caster ..... 25°18'
Trail ..... 76.7 mm (3.0 in)
Turning radius ..... 1.9 m (6.2 ft)
Front brake ..... Disc brake
Rear brake ..... Internal expanding
Front tire size 120/70-12 51J
Rear tire size 130/70-12 56J

ELECTRICAL

Ignition type ..... Electronic ignition (CDI)
Ignition timing ..... 14° B.T.D.C. at 4 000 r/min
Spark plug ..... NGK BPR7HS or ND W22FPR ... P-26, 53
NGK BPR6HS or ND W20FPR ... The others
Battery ..... 12V 14.4 kC (4Ah)/10HR ... P-53
12V 10.8 kC (3Ah)/10HR ... The others
Generator ..... Magneto
Fuse 10A
Headlight ..... 12V 15W × 2
Brake light/taillight 12V 21/5W
Turn signal light 12V 10W

CAPACITIES

Fuel tank ..... 6.8 L (1.5 Imp gal)
Engine oil tank ..... 1.2 L (1.1 Imp qt)
Final gear oil ..... 130 ml (4.6 Imp oz)
Engine coolant ..... 1 200 ml (1.1 Imp qt)

* These specifications are subject to change without notice.

COUNTRY OR AREA

The codes on the left, stand for the countries or areas on the right.

CODE	COUNTRY OR AREA
P-02	UK
P-04	France
P-22	Germany
P-26	Denmark
P-34	Italy
P-37	Brazil
P-39	Austria
P-53	Spain

PERIODIC MAINTENANCE

CONTENTS

PERIODIC MAINTENANCE SCHEDULE

The chart below lists the recommended intervals for all the required periodic service work necessary to keep the motorcycle operating at peak performance and economy. Maintenance intervals are expressed in terms of kilometers and months.

NOTES:

* *More frequent servicing may be performed on motorcycles that are used under severe conditions.*
* *The maintenance intervals are dependant on the kilometers or months, whichever comes first.*

PERIODIC MAINTENANCE CHART

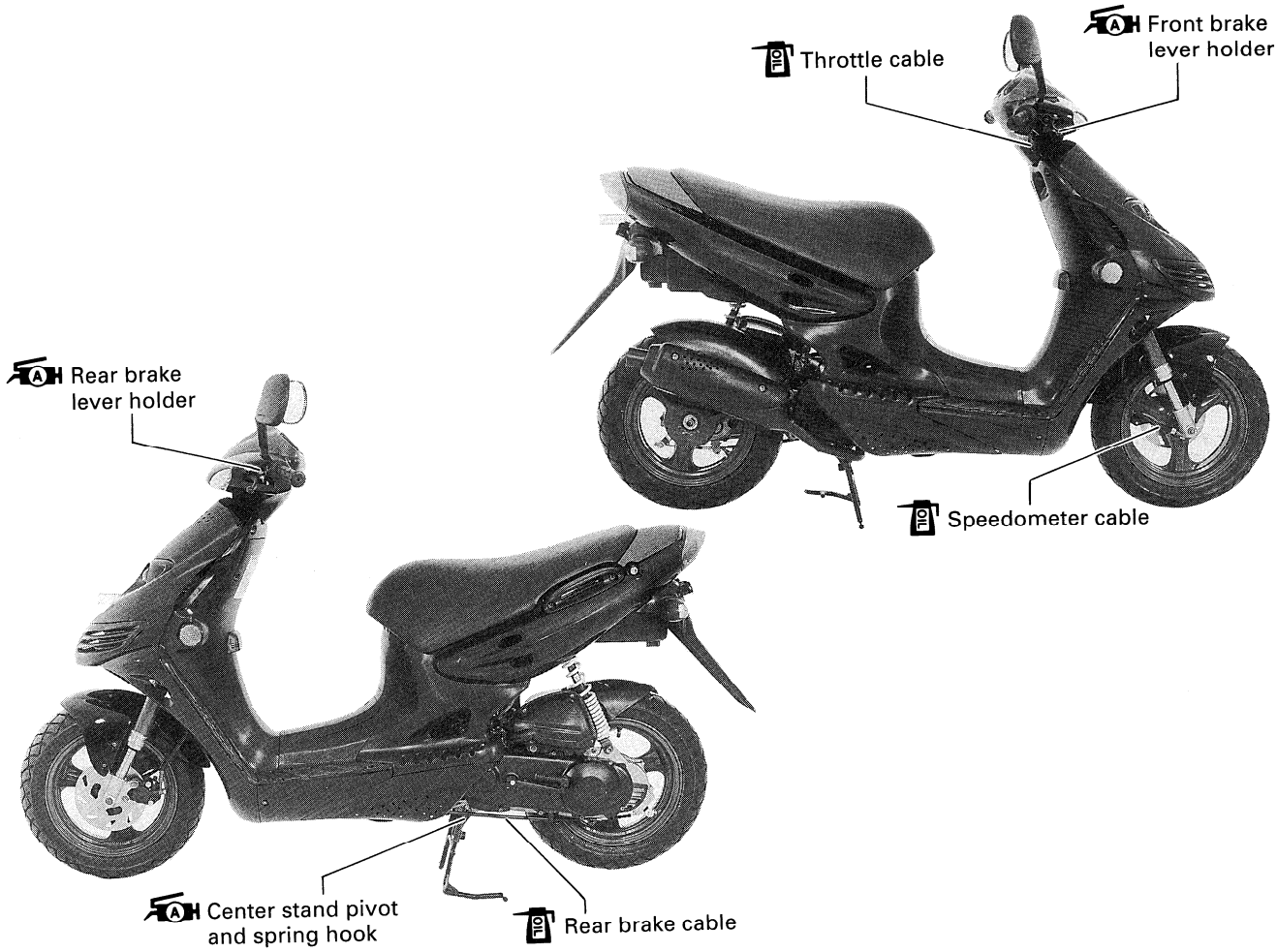
Interval / Item	km / months	Initial 1 000 / 2	Every 3 000 / 6	Every 6 000 / 12
Battery (specific gravity of electrolyte) ... For P-53		–	I	I
Air cleaner		–	C	C
Cylinder head and cylinder		–	C	C
Spark plug		–	C	R
Carburetor		I	I	I
Fuel line		I	I	I
		Replace every four years		
Engine coolant ... For AY50W		Replace every two years		
Radiator hose ... For AY50W		–	I	I
Final gear oil		I	–	I
Brakes		I	I	I
Brake hose		–	I	I
		Replace every four years		
Brake fluid		–	I	I
		Replace every two years		
Steering		I	I	I
Front fork		–	–	I
Rear suspension		–	–	I
Tires		I	I	I
Cylinder head nuts and exhaust pipe bolt and nut		T	T	T
Chassis bolts and nuts		T	T	T

NOTE: I: Inspect and clean, adjust, lubricate or replace as necessary
C: Clean R: Replace T: Tighten

LUBRICATION POINTS

Proper lubrication is important for smooth operation and long life of each working part of the motorcycle.

Major lubrication points are indicated below.



NOTE:

* *Before lubricating each part, clean off any rusty spots and wipe off any grease, oil, dirt or grime.*
* Lubricate *exposed parts which are subject to rust, with a rust preventative spray, especially whenever the motorcycle has been operated under wet or rainy conditions.*

MAINTENANCE AND TUNE-UP PROCEDURE

This section describes the servicing procedures for each item mentioned in the Periodic Maintenance chart.

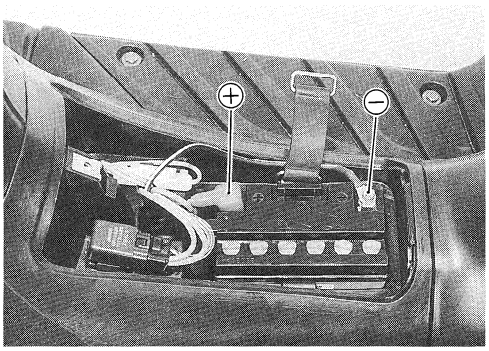
BATTERY (For P-53)

Inspect Every 3 000 km (6 months)

- Remove the battery holder cover.
- First, disconnect the battery ⊖ lead wire and then disconnect the battery ⊕ lead wire.

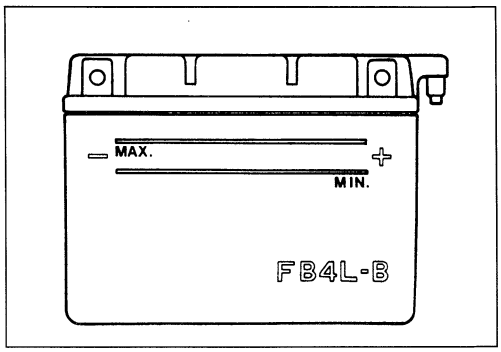
Check the electrolyte level. It should be within the MAX and MIN lines. If the electrolyte is below the MIN line, add only distilled water to the MAX line. Use a hydrometer ① to measure the specific gravity of the electrolyte.

TOOL 09900-28403: Hydrometer



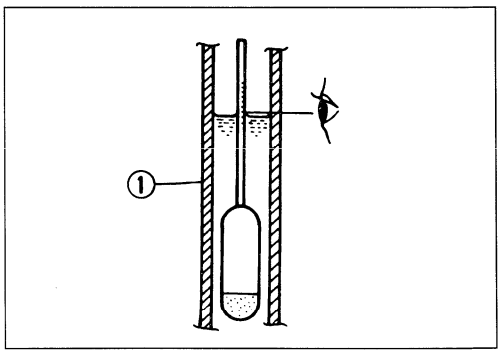
Standard specific gravity: 1.280 at 20°C (68°F)

A specific gravity reading of 1.22 (at 20°C) or less means that the battery needs recharging. Remove the battery from the motorcycle and charge it with a battery charger.



⚠ CAUTION

* **When removing the battery from the motorcycle, be sure to disconnect the battery ⊖ lead wire first.**
* **Never charge a battery while it is still in the motorcycle, as damage may result to the battery or regulator/rectifier.**
* **Be careful not to bend, obstruct, or change the routing of the battery breather hose. Make sure that the battery breather hose is attached to the battery vent and that its opposite end is always unobstructed.**
* **When installing the battery lead wires, install the battery ⊕ lead wire first and then the battery ⊖ lead wire last.**

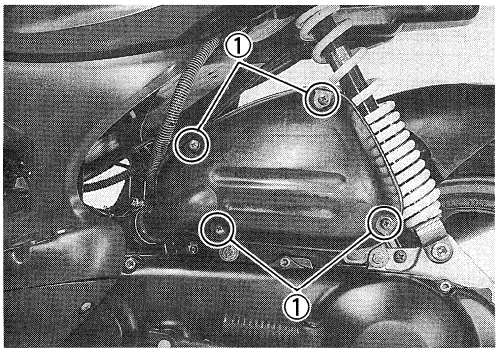


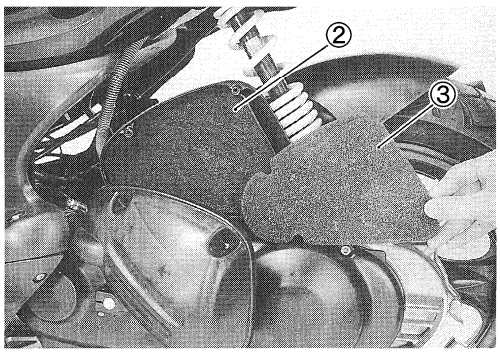
AIR CLEANER

Clean Every 3 000 km (6 months)

If the air cleaner is clogged with dust, intake resistance will be increased, with a resultant decrease in power output and an increase in fuel consumption. Check and clean the element in the following manner.

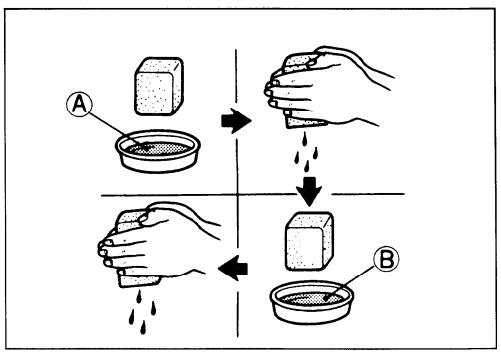
- Remove the air cleaner cover by removing the screws ①.
- Remove air cleaner elements ② and ③.
- Fill a container with a non-flammable cleaning solvent. Immerse the air cleaner elements in the cleaning solvent and wash them.
- Squeeze the cleaning solvent out of the washed element by pressing it between the palms of both hands: do not twist or wring the element or it will develop tears.
- Immerse the element in motor oil and squeeze the oil out of the element leaving it slightly wet with oil.





⚠ CAUTION

* **Inspect the air cleaner element for tears. A torn element must be replaced.**
* **Be sure to position the air cleaner element snugly and correctly, so that no incoming air will bypass it. Remember, rapid wear of the piston rings and cylinder bore is often caused by a defective or poorly fitted air cleaner element.**



Ⓐ Non-flammable cleaning solvent
Ⓑ Motor oil SAE #30 or SAE 10W/40

- Properly install the air cleaner elements into the air cleaner case.

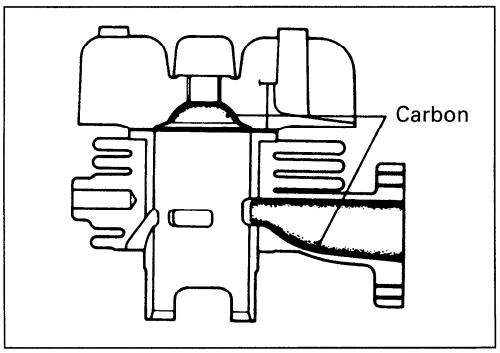
⚠ CAUTION

When installing the air cleaner elements, install the fine mesh air cleaner element first and then the large mesh air cleaner element.

CYLINDER HEAD AND CYLINDER

Remove carbon Every 3 000 km (6 months)

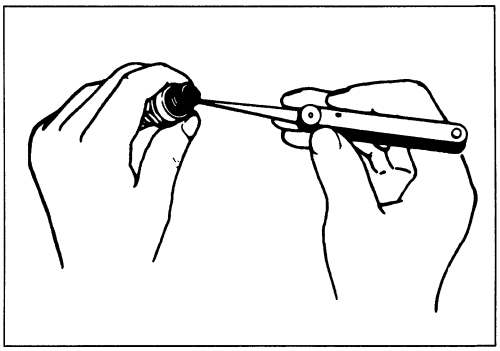
Carbon deposits in the combustion chamber and the cylinder head will raise the compression ratio and may cause preignition or overheating. Carbon deposited at the exhaust port of the cylinder will prevent the flow of exhaust gasses, reducing the output. Remove carbon deposits periodically.

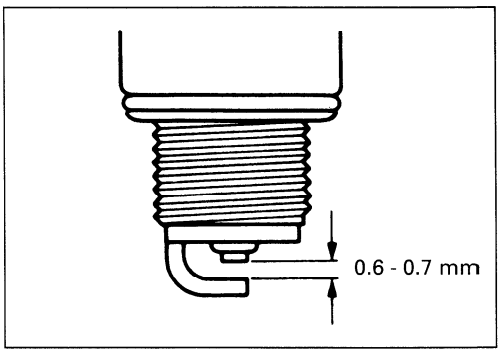


SPARK PLUG

Clean Every 3 000 km (6 months)
Replace Every 6 000 km (12 months)

Neglecting spark plug maintenance will eventually lead to difficult starting and poor performance. If the spark plug is used for a long period of time, the electrode gradually burns away and carbon builds up along the inside part of the spark plug. In accordance with the Periodic Maintenance chart, the spark plug should be removed for inspection, cleaning and to reset the gap.
Carbon deposits on the spark plug will prevent good sparking and cause misfiring. Clean the carbon deposits off periodically. If the center electrode is fairly worn down, the spark plug should be replaced. When installing a new spark plug, always check the gap with a thickness gauge.





TOOL 09900-20804: Thickness gauge

Spark plug gap: 0.6 – 0.7 mm (0.024 – 0.028 in)
Standard

		NGK	DENSO	BOSCH
AY50		BPR6HS	W20FPR-U	WR7BC
AY50W	P-26, 53	BPR7HS	W22FPR	
	The others	BPR6HS	W20FPR	

- Tighten the spark plug to the specified torque.

Spark plug: 28 N·m (2.8 kg-m, 20.0 lb-ft)

NOTE:

* *When checking the spark plug, make sure that unleaded fuel was used.*
If the spark plug is either sooty with carbon or burnt white, replace it.

* *Check the thread size and reach when replacing the spark plug.*

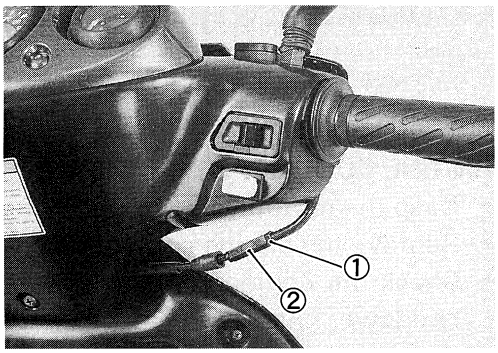
CARBURETOR

Inspect Initially at 1 000 km (2 months) and Every 3 000 km (6 months)

THROTTLE CABLE PLAY

- Loosen the lock nut ① and adjust the throttle cable play Ⓐ by turning adjuster ② in or out to obtain the specified throttle cable play. After adjusting the throttle cable play, tighten the lock nut.

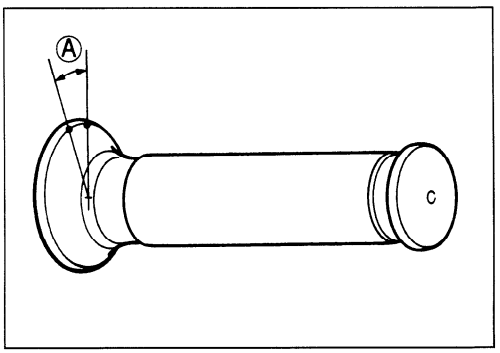
Throttle cable play Ⓐ: 3 – 6 mm (0.1 – 0.2 in)



ENGINE IDLE SPEED

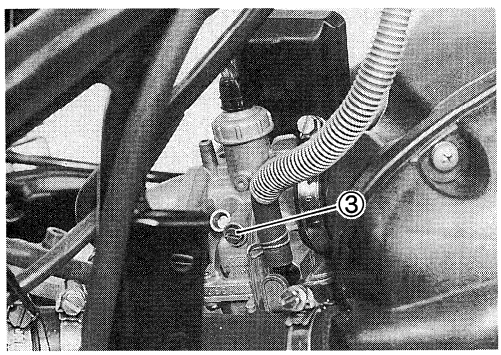
- Adjust the throttle cable play.
- Remove the frame covers and side leg shields. (Refer to page 6-3.)
- Warm-up the engine.

NOTE:
Adjust the engine idle speed when the engine is hot.



- Hold the tachometer about 5 cm (1.97 in) from the plug cord.

TOOL 09900-26006: Tachometer

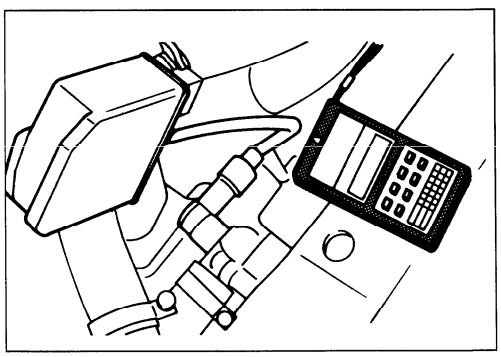


NOTE:
Do not touch the plug cord with the tachometer.

- Adjust the throttle stop screw ③ to obtain the specified engine idle speed.

Engine idle speed: 1 700 ± 200 r/min

- Finally, adjust the throttle cable play.



FUEL LINE

Inspect Initially at 1000 km (2 months) and Every 3 000 km (6 months)
Replace Every four years

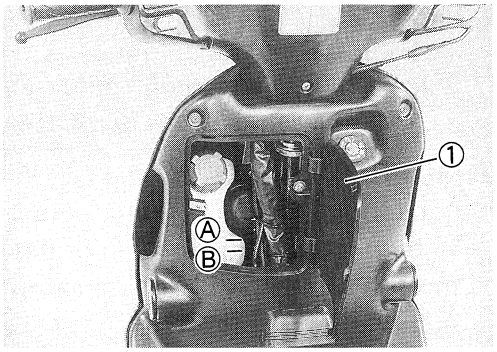
COOLING SYSTEM (For AY50W)

Inspect Every 3 000 km (6 months)
Replace engine coolant Every 2 years

ENGINE COOLANT LEVEL CHECK

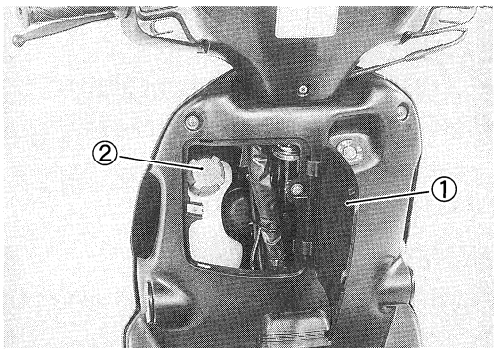
- Keep the motorcycle upright.
- Remove the engine coolant reservoir cover ①.
- Check the engine coolant level by observing the upper and lower lines on the engine coolant reservoir.
- If the level is below the lower line, add engine coolant to the upper line.

Ⓐ Upper line Ⓑ Lower line



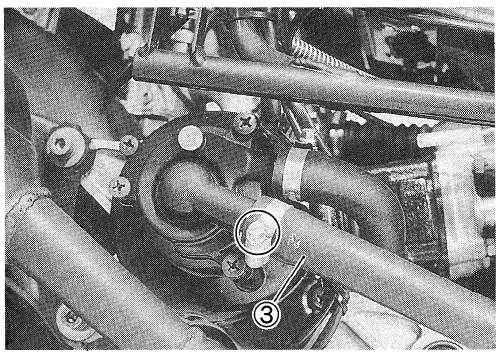
ENGINE COOLANT CHANGE

- Remove the frame cover (R) and side leg shield (R). (Refer to page 6-3.)
- Remove the engine coolant reservoir cover ①.
- Remove the engine coolant reservoir cap ② and disconnect the engine coolant hose ③ from the water pump. Then, drain the engine coolant.

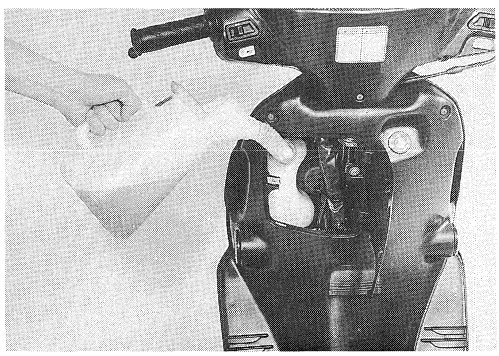


⚠ WARNING

* **Do not open the engine coolant reservoir cap when the engine is hot, as you may be injured by escaping hot liquid or vapor.**
* **Engine coolant may be harmful if swallowed or if it comes in contact with the skin or eyes. If engine coolant gets into the eyes or contacts the skin, flush the eyes or wash the skin thoroughly, with plenty of water. If engine coolant is swallowed, induce vomiting and call a physician immediately.**

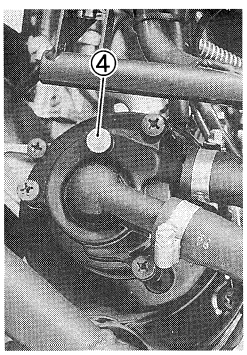


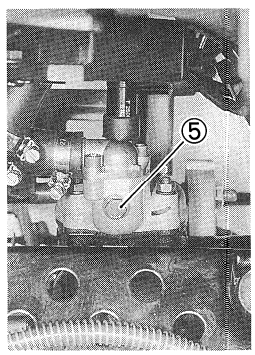
- Flush the radiator with fresh water, if necessary.
- Connect the engine coolant hose ③ securely.
- Pour the specified engine coolant up to the reservoir.
- Loosen the air bleeder bolts (④, ⑤) on the water pump cover and cylinder head.
- Tighten the air bleeder bolts when air has been bled and coolant comes out.



NOTE:
For engine coolant information, refer to page 4-2.

- Install the engine coolant reservoir cap ② securely.
- After warming up and cooling down the engine, add the specified engine coolant to the upper line of the engine coolant reservoir.





⚠ CAUTION

Repeat the above procedure several times and make sure that the radiator is filled with engine coolant to the upper line of the engine coolant reservoir.

LLC Cooling system capacity:
1 200 ml (1.1 lmp qt)

FINAL GEAR OIL

Inspect Initially at 1 000 km (2 months) and
Every 6 000 km (12 months)

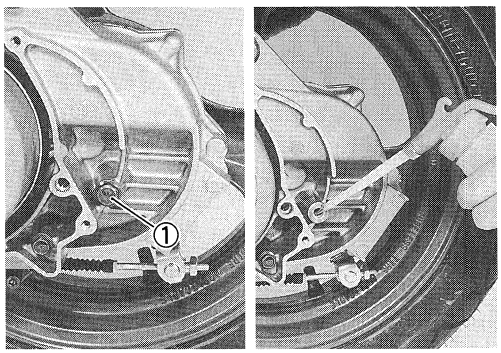
- Remove the rear leg shield (L) and lower leg shield.
- Remove the kick starter lever.
- Remove the clutch cover. (Refer to page 3-9.)

- Remove the oil level bolt ① and inspect the oil level. If the oil level is below the brim of the final gear oil level hole, add oil until it flows from the level hole.

Final gear oil viscosity and classification: SAE 10W/40

- Tighten the final gear oil level bolt ① to the specified torque.

Final gear oil level bolt: 12 N·m (1.2 kg-m, 8.5 lb-ft)

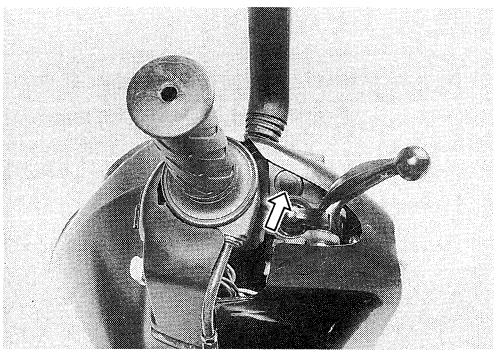


BRAKES

[BRAKE]
Inspect Initially at 1 000 km (2 months) and Every 3 000 km (6 months)

[BRAKE HOSE AND BRAKE FLUID]
Inspect Every 3 000 km (6 months)
Replace hoses Every 4 years.
Replace fluid Every 2 years.

FRONT BRAKE FLUID LEVEL



- Keep the motorcycle upright and place the handlebars straight.
- Check the brake fluid level by observing the lower limit line on the brake fluid reservoir.
- When the level is below the lower limit line, replenish with brake fluid that meets the following specification.

Specification and classification: DOT 4

⚠ WARNING

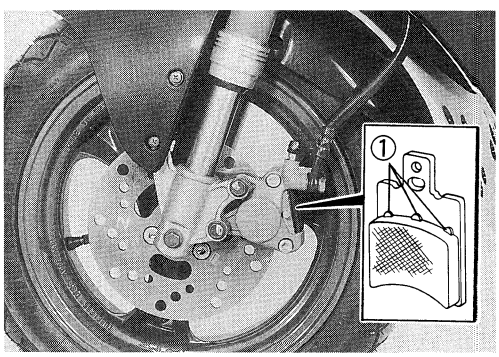
The brake system of this motorcycle is filled with a glycol-based brake fluid. Do not use or mix different types of fluid such as silicone-based and petroleum-based fluids. Do not use any brake fluid taken from old, used or unsealed containers. Never re-use brake fluid left over from the last servicing or stored for a long period of time.

⚠ WARNING

Brake fluid, if it leaks, will interfere with safe running and immediately discolor painted surfaces. Check the brake hoses and hose joints for cracks and oil leakage before riding.

FRONT BRAKE PADS

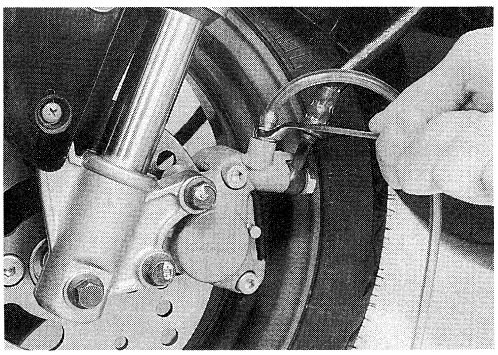
The extent of brake pad wear can be checked by observing the limit marks ① on the pad. When the wear exceeds the limit marks, replace the pads with new ones. (Refer to page 6-9.)

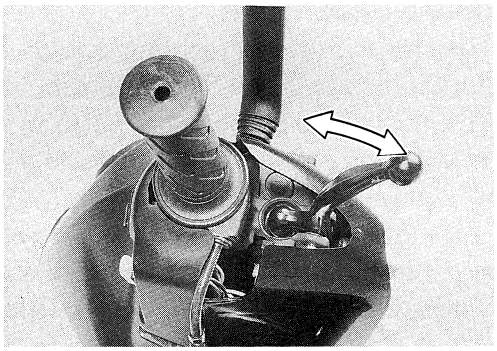


⚠ CAUTION

Replace the brake pads as a set, otherwise braking performance will be adversely affected.

AIR BLEEDING THE BRAKE FLUID CIRCUIT





Air trapped in the brake fluid circuit acts like a cushion to absorb a large proportion of the pressure developed by the master cylinder and interferes with the full braking performance of the brake caliper. The presence of air is indicated by "sponginess" of the brake lever and also by lack of braking force. Considering the danger to which such trapped air exposes the machine and rider, it is essential that, after remounting the brake and restoring the brake system to the normal condition, the brake fluid circuit be purged of air in the following manner:

- Fill the master cylinder reservoir to the upper end of the inspection window. Replace the reservoir cap to prevent dirt from entering.
- Attach a hose to the caliper bleeder valve, and insert the free end of the hose into a receptacle.
- Bleed air from the bleeder valve.
- Squeeze and release the brake lever several times in rapid succession and squeeze the lever fully without releasing it. Loosen the bleeder valve by turning it a quarter of a turn so that the brake fluid runs into the receptacle; this will remove the tension of the brake lever causing it to touch the handlebar grip. Then, close the valve, pump and squeeze the lever, and open the valve. Repeat this process until the fluid flowing into the receptacle no longer contains air bubbles.

NOTE:
While bleeding the brake system, replenish the brake fluid in the reservoir as necessary.
Make sure that there is always some fluid visible in the reservoir.

- Close the bleeder valve, and disconnect the hose. Fill the reservoir with brake fluid to the top of the inspection window.

Air bleeder valve: 7.5 N·m (0.75 kg-m, 5.5 lb-ft)

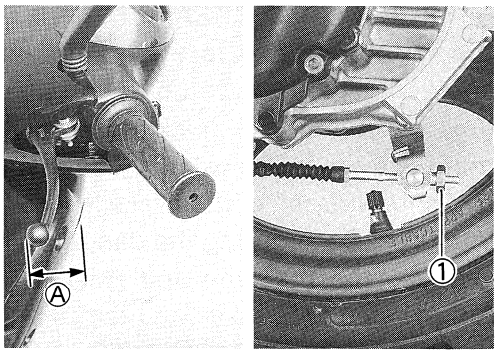
⚠ CAUTION

Handle the brake fluid with care: the fluid reacts chemically with paint, plastics, rubber materials, etc.

REAR BRAKE LEVER PLAY

- Turn the adjusting nut ① until the rear brake lever play is within specification.

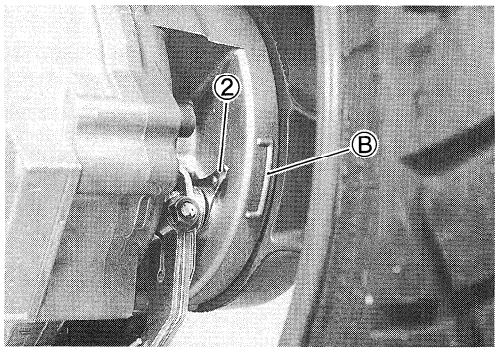
Rear brake lever play Ⓐ 15 – 25 mm (0.6 – 1.0 in)



BRAKE SHOE WEAR

This motorcycle is equipped with the brake lining wear limit indicator ② on the brake cam lever.
To check brake lining wear, perform the following steps.

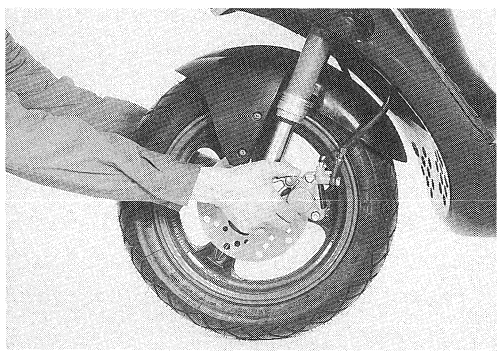
- Make sure that the rear brake is properly adjusted.
- Squeeze the rear brake lever. Make sure that the indicator ② is within the range Ⓑ embossed on the crankcase.
- If the indicator goes beyond the range, the brake shoe assembly should be replaced with a new set of shoes.



STEERING

Inspect Initially at 1 000 km (2 months) and Every 3 000 km (6 months)

The steering should be adjusted properly for smooth turning of the handlebars and safe operation. Overtight steering prevents smooth turning of the handlebars and too loose steering will cause poor stability. Check that there is no play in the front fork. Support the motorcycle so that the front wheel is off the ground. With the wheel facing straight ahead, grasp the lower fork tubes near the axle and pull forward. If play is found, readjust the steering. (Refer to page 6-25)



FRONT FORK

Inspect Every 6 000 km (12 months)

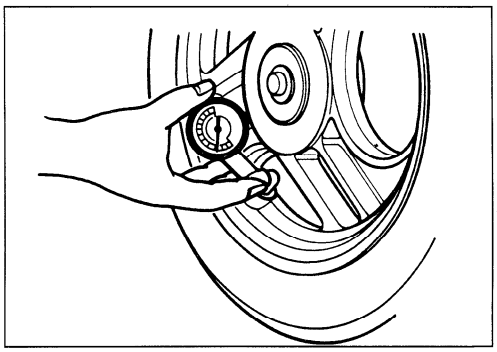
Inspect the front fork for scoring or scratches on the outer surface of the inner tube. Replace any defective parts, if necessary. (Refer to page 6-17.)

REAR SUSPENSION

Inspect Every 6 000 km (12 months)

Inspect the rear shock absorber for oil leakage. Inspect the bushings and the crankcases for wear and damage. Replace any defective parts, if necessary.

TIRES



Inspect Initially at 1 000 km (2 months) and Every 3 000 km (6 months)

TIRE PRESSURE

If the tire pressure is too high or too low, steering will be adversely affected and tire wear will increase. Therefore, maintain the correct tire pressure for good roadability and a longer tire life. Cold inflation tire pressure is as follows.

For P-26, 34 and 53

COLD INFLATION TIRE PRESSURE	SOLO RIDING		
	kPa	kg/cm^2	psi
FRONT	125	1.25	18
REAR	175	1.75	25

For the others

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm^2	psi	kPa	kg/cm^2	psi
FRONT	125	1.25	18	125	1.25	18
REAR	175	1.75	25	230	2.30	33

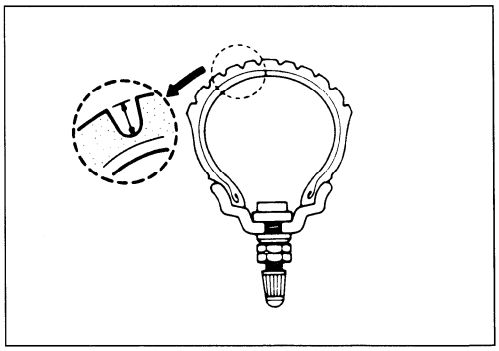
⚠ CAUTION

The standard tire fitted on this motorcycle is 120/70-12 51J for the front and 130/70-12 56J for the rear. The use of tires other than those specified may cause instability. It is highly recommended to use the specified tires.

TIRE TREAD CONDITION

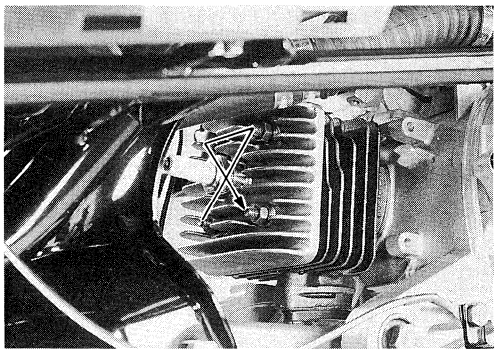
Operating the motorcycle with excessively worn tires will decrease riding stability and consequently invite a dangerous situation. It is highly recommended to replace a tire when the remaining depth of the tire tread reaches the following specification.

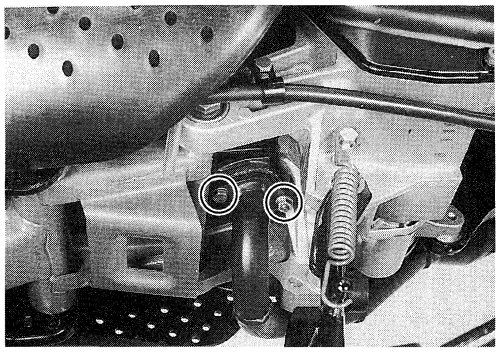
Tire tread depth limit: 1.6 mm (0.06 in) (Front & Rear)



TOOL 09900-20805: Tire depth gauge

CYLINDER HEAD NUTS AND EXHAUST PIPE BOLT AND NUT





Tighten Initially at 1 000 km (2 months) and Every 3000 km (6 months)

Cylinder head nuts, when they are not tightened to the specified torque, may result in leakage of the compressed mixture and reduce output. Tighten the cylinder head nuts as follows.

- Remove the frame covers and side leg shields. (Refer to page 6-3.)
- Remove the spark plug cap.
- Remove the cylinder head cover .... Except for AY50W
- Tighten the cylinder head nuts and exhaust pipe bolt and nut to the specified torque.

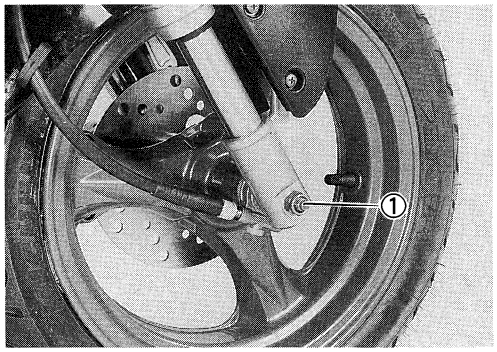
Cylinder head nut: 10 N·m (1.0 kg-m, 7.0 lb-ft)
Exhaust pipe bolt and nut: 10 N·m (1.0 kg-m, 7.0 lb-ft)

CHASSIS BOLTS AND NUTS

Tighten Initially 1 000 km (2 months) and Every 3 000 km (6 months)

Check that all chassis bolts and nuts are tightened to their specified torque.

Item	N·m	kg-m	lb-ft
① Front axle nut	42	4.2	30.5
② Steering stem lock nut	30	3.0	21.5
③ Handlebar set bolt	25	2.5	18.0
④ Handlebar clamp nut	50	5.0	36.0
⑤ Front brake caliper mounting bolt	26	2.6	19.0
⑥ Front brake hose union bolt	23	2.3	16.5
⑦ Front brake caliper air bleeder valve	7.5	0.75	5.5
⑧ Front brake disc bolt	23	2.3	16.5
⑨ Front brake master cylinder bolt	10	1.0	7.0
⑩ Rear axle nut	75	7.5	54.0
⑪ Rear shock absorber bolt (upper)	29	2.9	21.0
⑫ Rear shock absorber nut (lower)	35	3.5	25.5
⑬ Rear brake cam lever nut	10	1.0	7.0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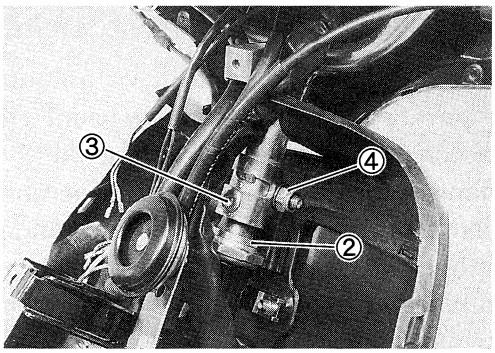
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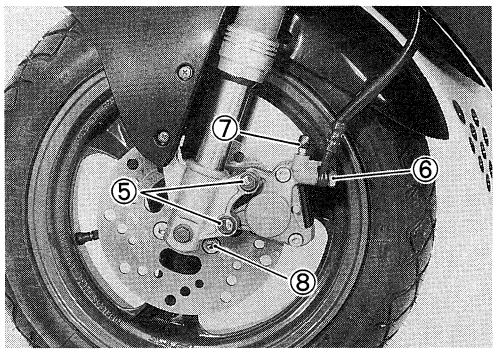
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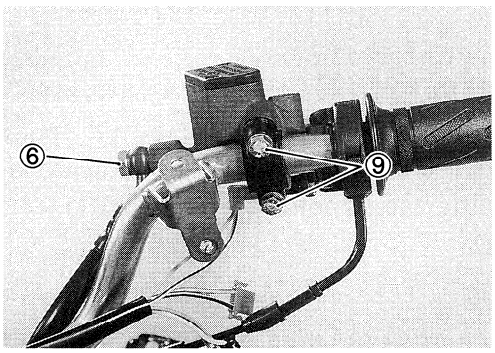
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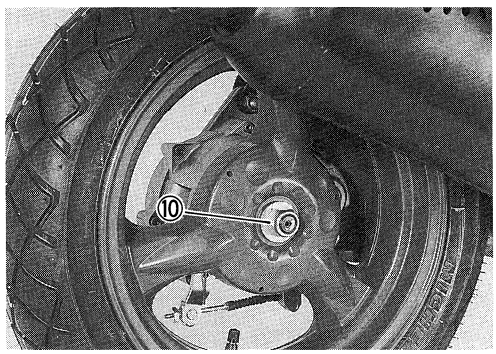
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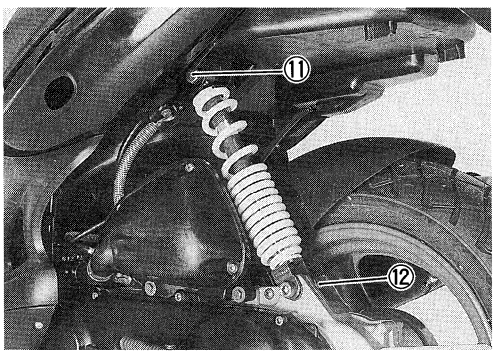
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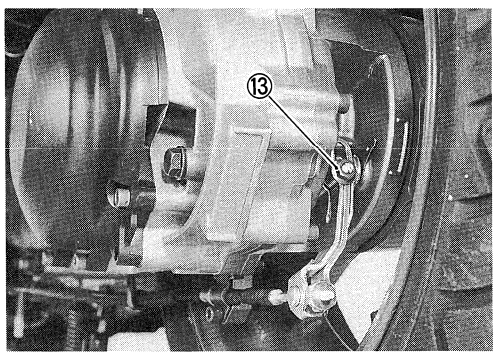
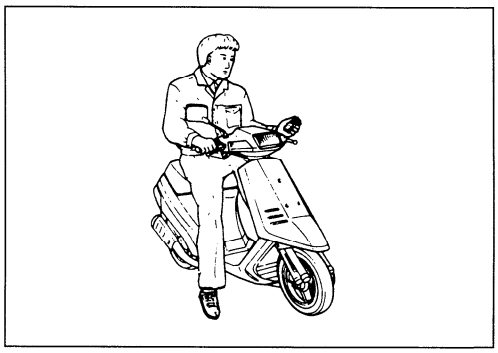

⑬

AUTOMATIC CLUTCH INSPECTION

This motorcycle is equipped with an automatic clutch and variable ratio belt drive transmission. The engagement of the clutch is governed by engine RPM and a centrifugal mechanism located in the clutch assembly.
To insure proper performance and longevity of the clutch assembly it is essential that the clutch assembly engages smoothly and gradually. Two inspection checks must be performed to thoroughly check the operation of the drivetrain. Follow the procedures below.



1 INITIAL ENGAGEMENT INSPECTION

Warm-up the engine to the normal operating temperature.
Remove the right frame cover and side leg shield.
Hold the tachometer about 5 cm (1.97 in) from the plug cord.

NOTE:
Do not touch the plug cord with the tachometer.

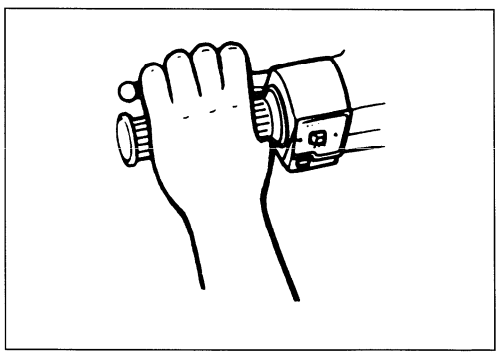
Sit on the motorcycle, make sure that it is on level ground, increase the engine RPM slowly and note the RPM at which the motorcycle begins to move forward.

TOOL 09900-26006: Tachometer
CLUTCH ENGAGEMENT RPM: 3 300 ± 200 r/min

2 CLUTCH "LOCK-UP" INSPECTION

Perform this inspection to determine if the clutch assembly is engaging fully and not slipping.
Warm-up the engine to normal operating temperature.
Hold the tachometer about 5 cm (1.97 in) from the plug cord.

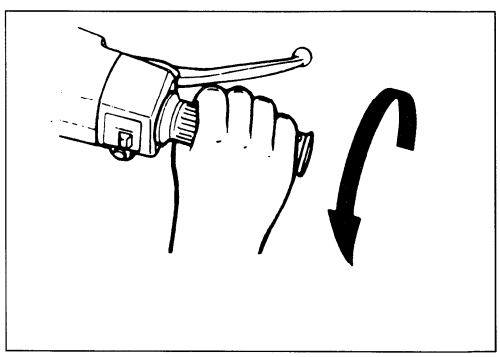
NOTE:
Do not touch the plug cord with the tachometer.



Fully apply the rear brake.
Briefly open the throttle fully and note the maximum engine RPM sustained during the test cycle.

⚠ CAUTION

Do not apply full power for more than 10 seconds or damage to the clutch assembly or engine may occur.



CLUTCH LOCK-UP RPM: 4 500 ± 300 r/min

ENGINE

CONTENTS

ENGINE COMPONENTS REMOVABLE WITH THE ENGINE IN PLACE

The parts listed below can be removed and reinstalled without removing the engine from the frame. Refer to the page listed in this section for removal instruction.

ENGINE LEFT SIDE

ENGINE CENTER

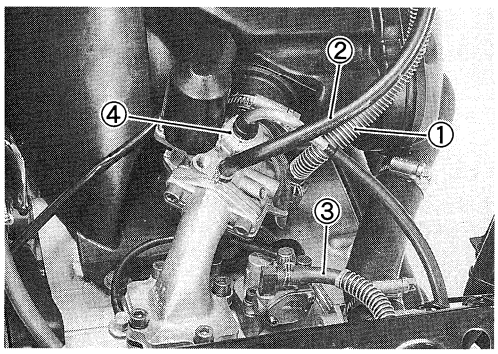
ENGINE RIGHT SIDE

ENGINE REMOVAL AND REINSTALLATION

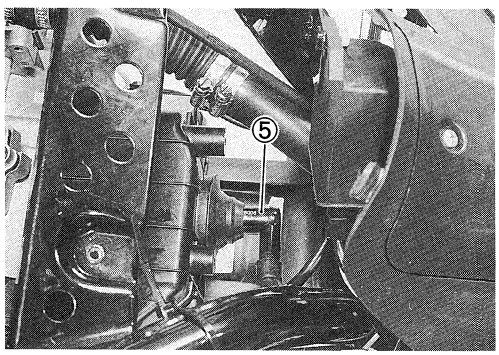
ENGINE REMOVAL

Before taking the engine out of the frame, wash the engine with a steam cleaner. Engine removal is sequentially explained in the following steps.

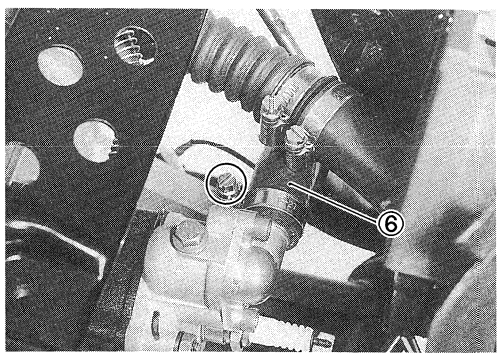
- Remove the frame covers and side leg shields. (Refer to page 6-3.)
- Drain the engine coolant. (Refer to page 2-7.)···For AY50W
- First, disconnect the battery ⊖ lead wire and then disconnect the battery ⊕ lead wire.
- Disconnect the fuel hoses ①, vacuum hose ② and oil hose ③.
- Remove the carburetor cap ④ with the throttle cable and throttle valve.
- Disconnect the carburetor heater lead wire.···P-02 only.



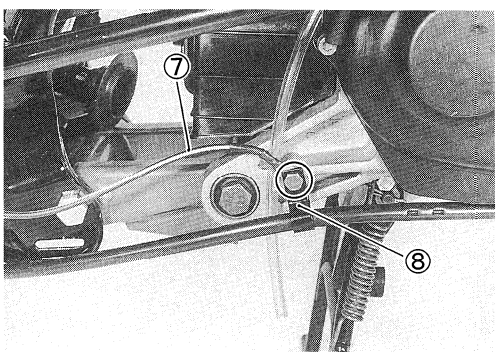
- Disconnect the spark plug cap ⑤.



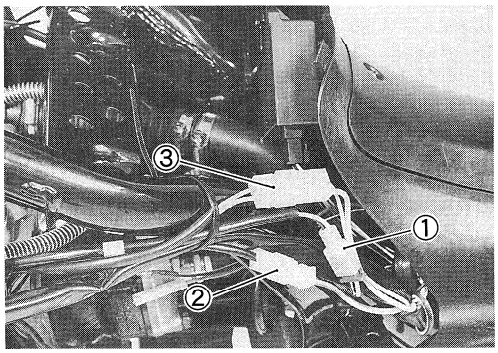
- Disconnect the coolant hose ⑥.···For AY50W



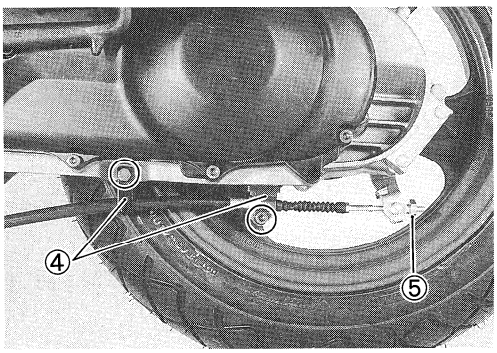
- Disconnect the engine ground wire ⑦ and cable holder ⑧.



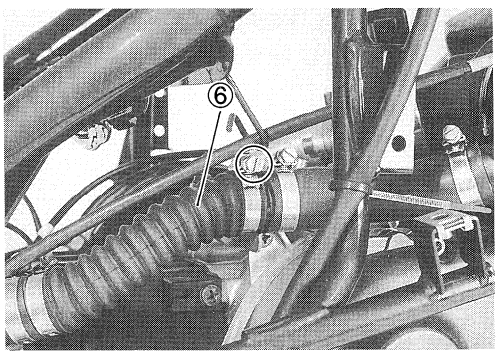
- Disconnect the thermoelement coupler ①, starter motor coupler ② and magneto coupler ③.



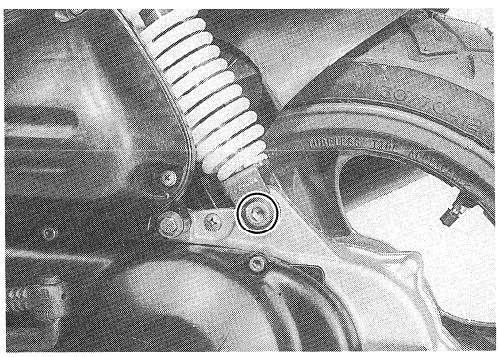
- Remove the rear brake cable by removing the cable holders ④ and the adjusting nut ⑤.



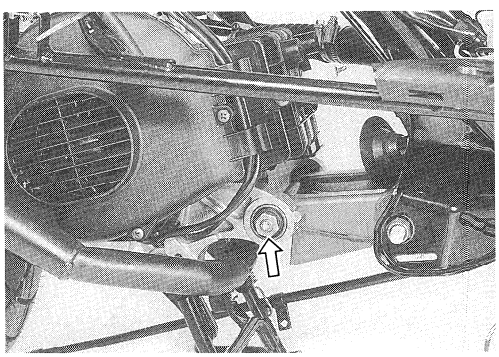
- Disconnect the air cleaner intake boot ⑥ by loosening the clamp screw.



- Remove the rear shock absorber lower mounting bolt.



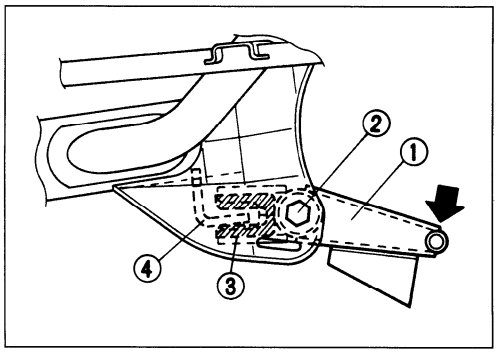
- Remove the engine by removing the engine mounting nut and shaft.



ENGINE REINSTALLATION

Install the engine in the reverse order of removal.

- Install the crankcase bracket ① to the frame and insert the engine mounting shaft ②.
- Push down on the rear part of the crankcase bracket and have the damper ③ touch the stopper ④. While holding the damper, tighten the engine mounting bracket nut to the specified torque.

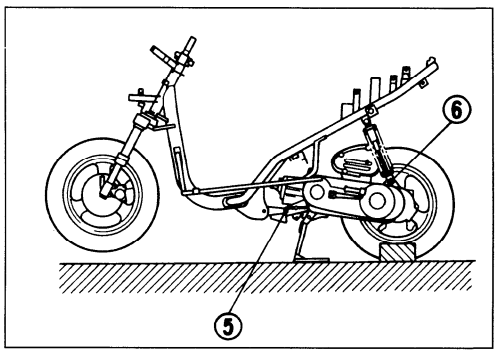


Engine mounting bracket nut : 60 N·m (6.0 kg-m, 43.5 lb-ft)

- Install the engine and tighten the engine mounting nut ⑤ to the specified torque.

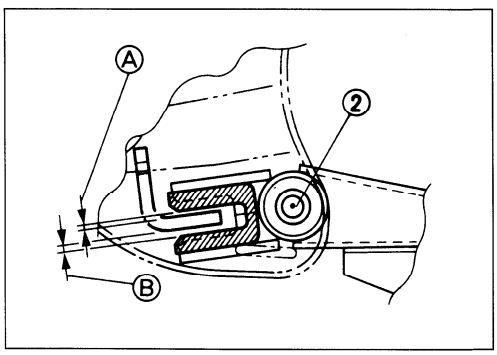
Engine mounting nut : 60 N·m (6.0 kg-m, 43.5 lb-ft)

NOTE:
When tightening the engine mounting nut, make sure that the front wheel is elevated.



- Tighten the rear shock absorber lower mounting nut ⑥ to the specified torque.

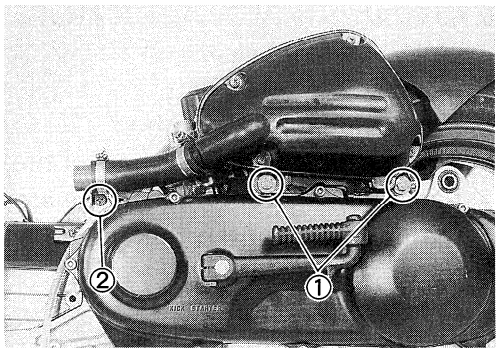
Rear shock absorber nut : 35 N·m (3.5 kg-m, 25.5 lb-ft)

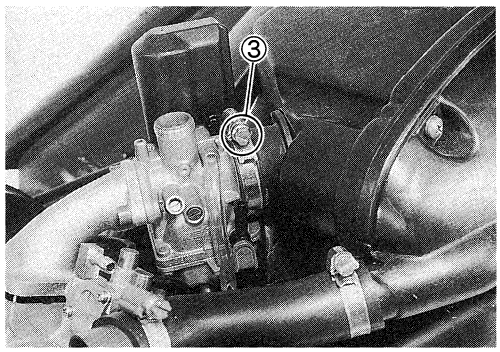


- Place 65 kg (143 lbs) on the seat, after reinstalling the engine.
- Check that clearances Ⓐ and Ⓑ are equal. If clearances Ⓐ and Ⓑ are not equal, repeat the engine remounting procedures.
- After installing the engine, properly route the wire harness, cables and hoses. Refer to the wire and cable routing sections. (Refer to pages 8-11 and 8-18.)
- Adjust the following items to the proper specification.

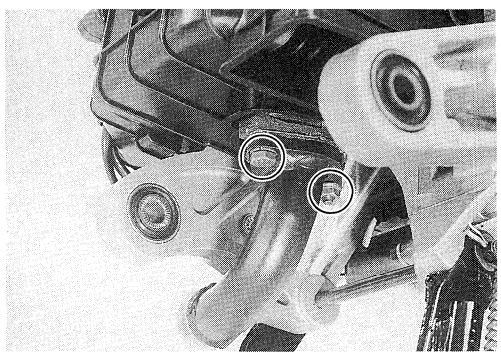
ENGINE DISASSEMBLY

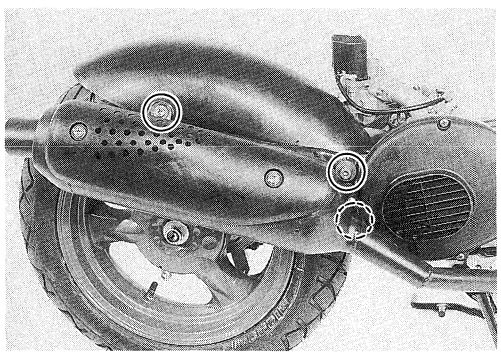
- Remove the air cleaner by removing the mounting bolts ① and screw ② and loosening the carburetor intake clamp screw ③.



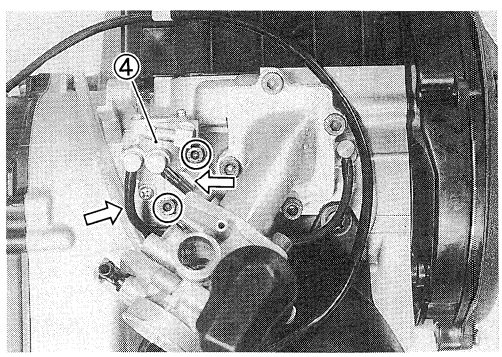


- Remove the muffler by removing the mounting bolts, nut and screw.

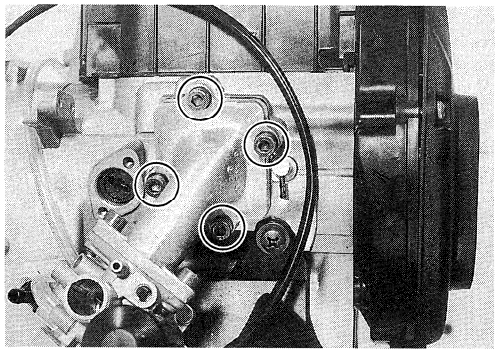




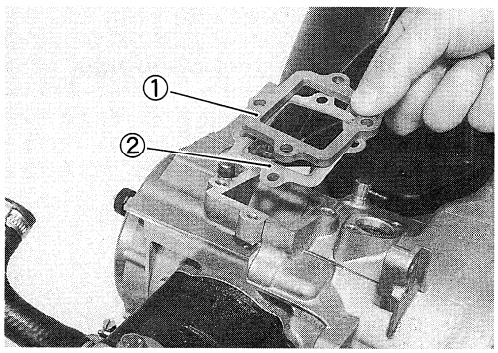
- Disconnect the oil hoses.
- Remove the oil pump ④.



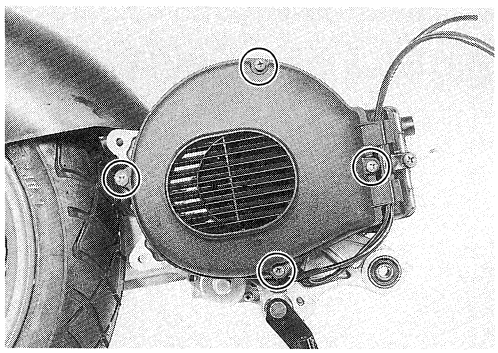
- Remove the intake pipe with the carburetor and reed valve.



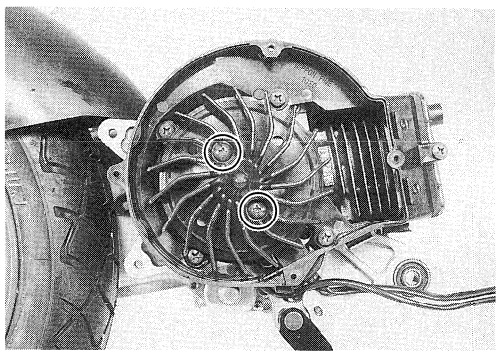
- Remove the reed valve spacer ① and gasket ②.···For AY50W



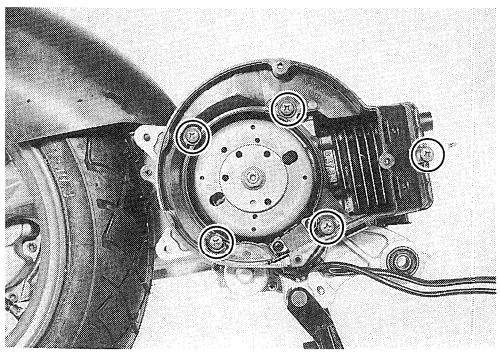
- Remove the cooling fan cover.···For AY50



- Remove the cooling fan.···For AY50

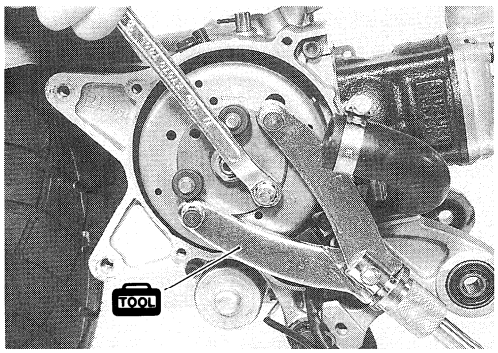


- Remove the cooling fan case.···For AY50



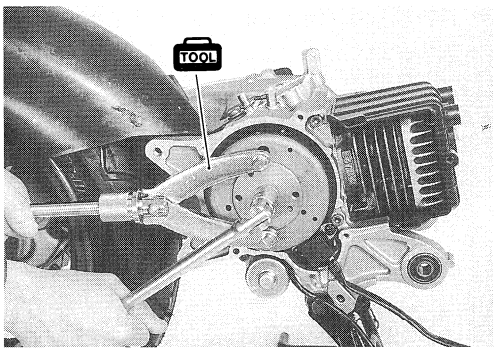
- Remove the water pump housing. (Refer to page 5-6.)···For AY50W
- Remove the water pump drive pins.···For AY50W

TOOL **09930-40113: Rotor holder**



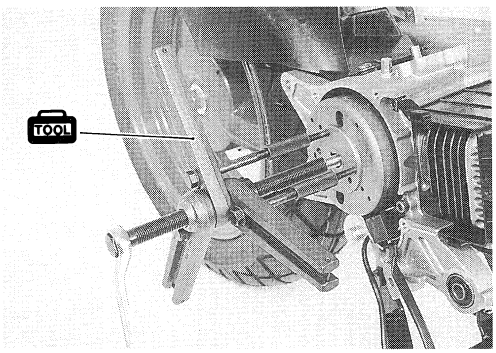
- Remove the magneto rotor nut with the special tool.

TOOL **09930-40113: Rotor holder**

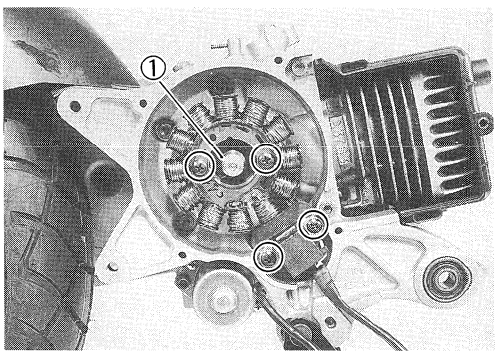


- Remove the magneto rotor with the special tool.

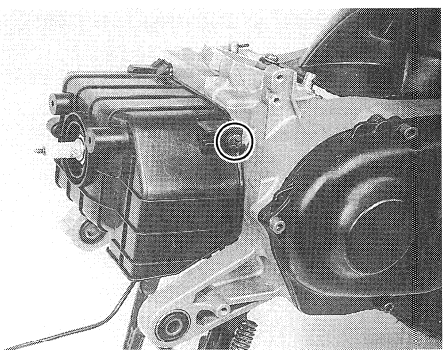
TOOL **09920-13120: Rotor remover (Crankcase separating tool)**



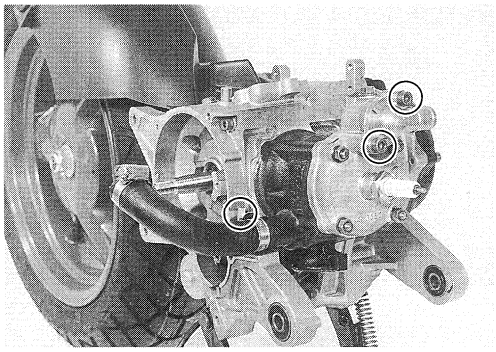
- Remove the stator coil, pick-up coil and key ①.



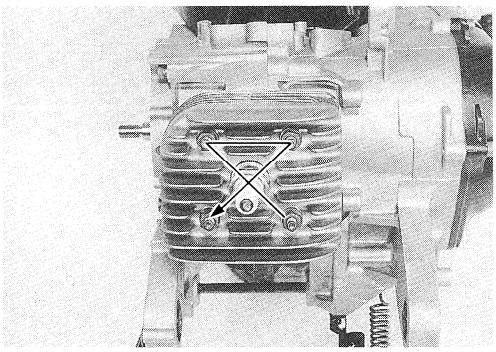
- Remove the cylinder head cover.···For AY50



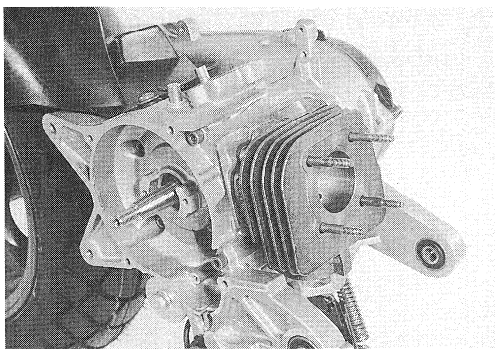
- Remove the coolant hose, cover and O-ring.···For AY50W



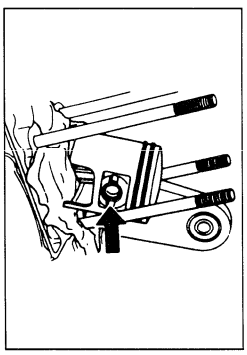
- Loosen the cylinder head nuts in a crisscross pattern and remove them.
- Remove the cylinder head and gasket.

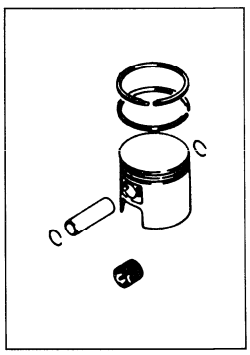


- Remove the cylinder.

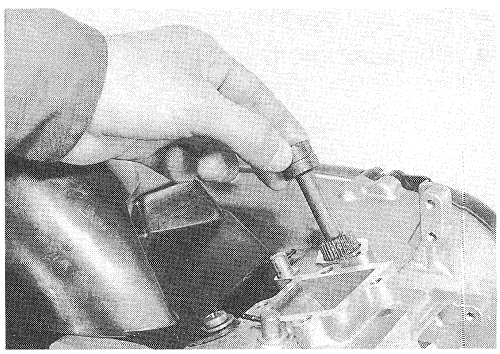


- Place a clean rag over the cylinder base to prevent the piston pin circlip from dropping into the crankcase.
- Remove the piston pin circlip with long-nose pliers.
- Remove the piston by removing the piston pin.

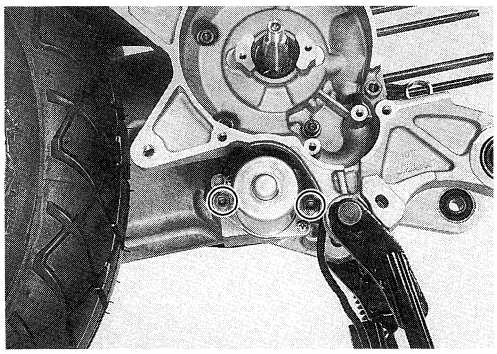




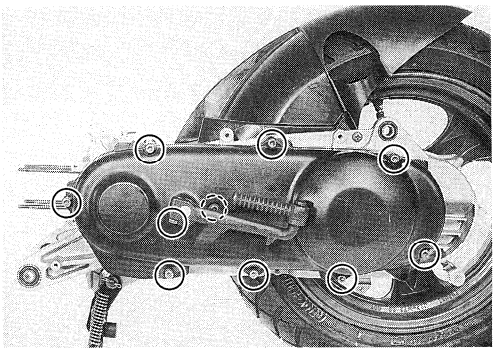
- Remove the oil pump driven gear.



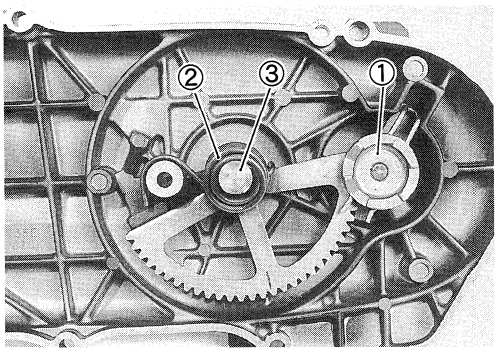
- Remove the starter motor.



- Remove the kick starter lever.
- Remove the clutch cover.

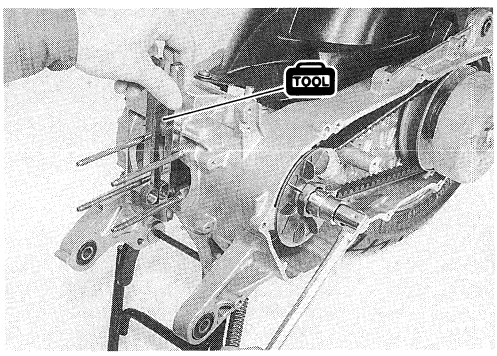


- Remove the kick starter driven gear ①, kick starter shaft spring ② and kick starter shaft ③.

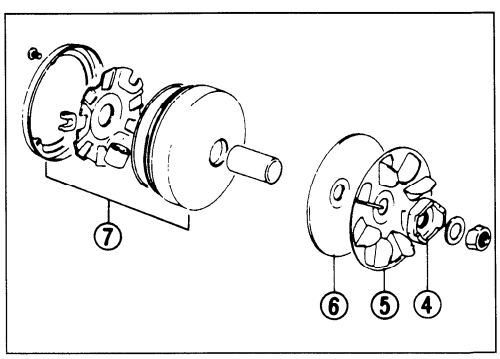


- Remove the kick starter nut with the special tool.

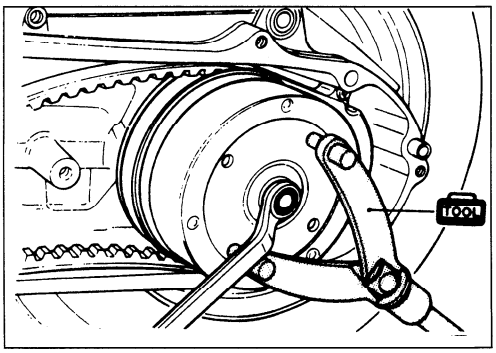
TOOL 09910-20115: Conrod holder



- Remove the kick starter ④, fan ⑤ and fixed drive face ⑥.
- Disassemble the movable drive face ⑦.



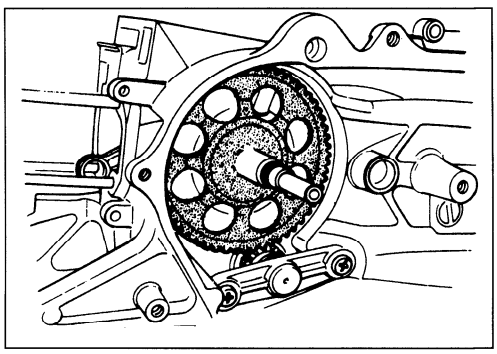
- Remove the clutch housing with the special tool.



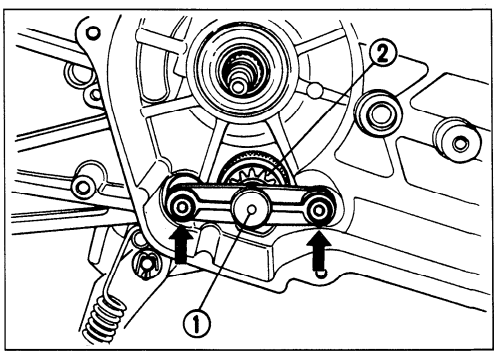
TOOL 09930-40113: Rotor holder

- Remove the clutch shoe assembly and drive belt.
- Disassemble the clutch shoe assembly. (Refer to page 3-17.)

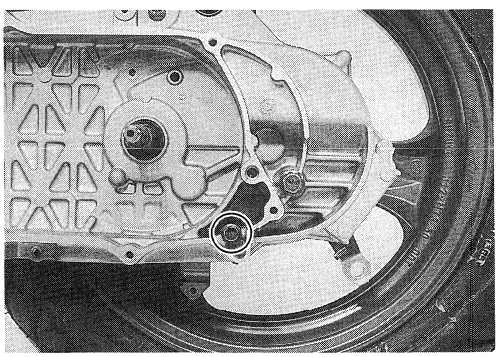
- Remove the starter driven gear.



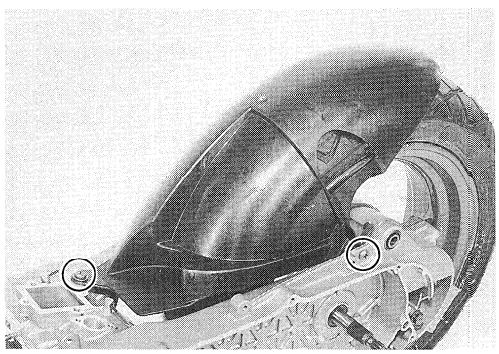
- Remove the starter idle gear cap ① and starter pinion gear assembly ②.



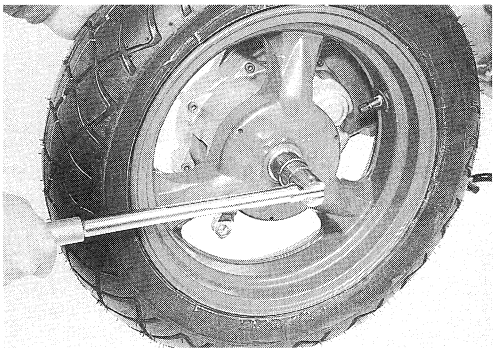
- Drain the gear oil.



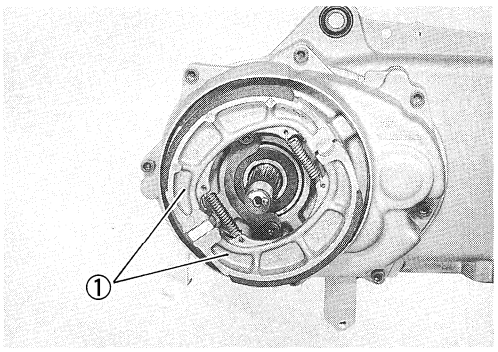
- Remove the rear fender.



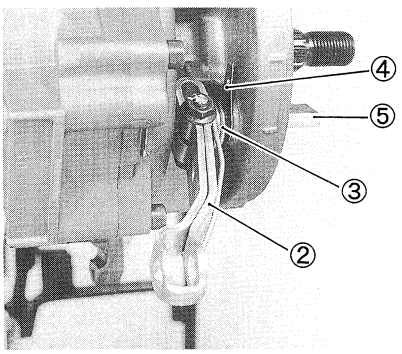
- Remove the rear wheel.



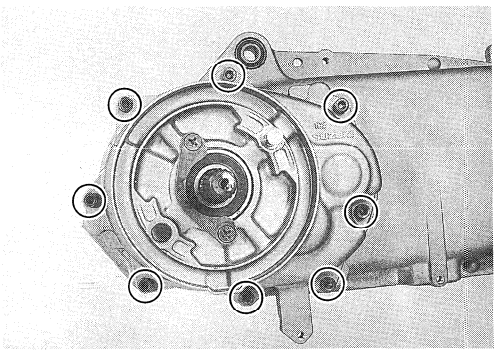
- Remove the brake shoes ①.



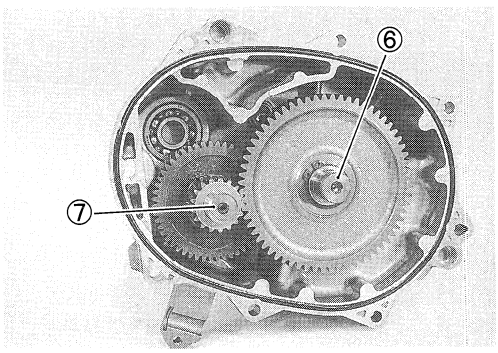
- Remove the brake cam lever ②, return spring ③, brake lining wear limit indicator ④ and brake camshaft ⑤.



- Remove the gear box cover.

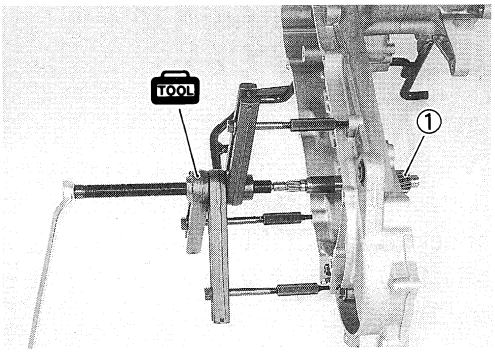


- Remove the final driven gear with the rear axle shaft ⑥.
- Remove the idle shaft/gear ⑦.

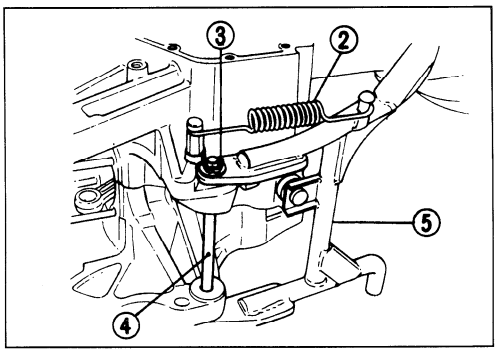


- Remove the driveshaft ① with the special tool.

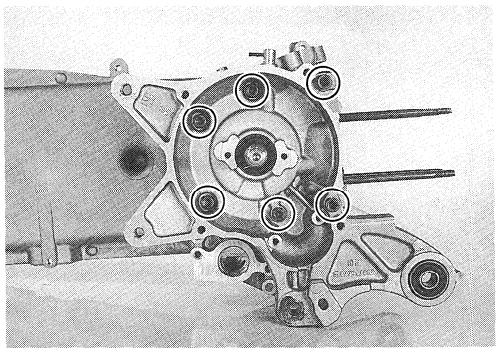
TOOL 09920-13120: Crankcase separating tool



- Remove the center stand spring ②.
- Remove the cotter pin ③ and center stand shaft ④.
- Remove the center stand ⑤.

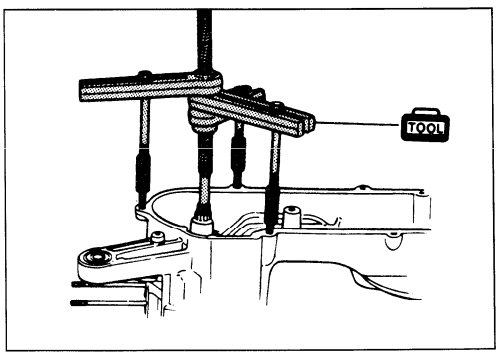


- Remove the crankcase bolts.



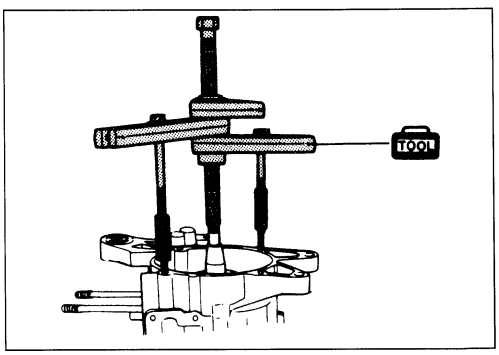
- Separate the left and right crankcases with the special tool.

TOOL 09920-13120: Crankcase separating tool



- Remove the crankshaft with the special tool.

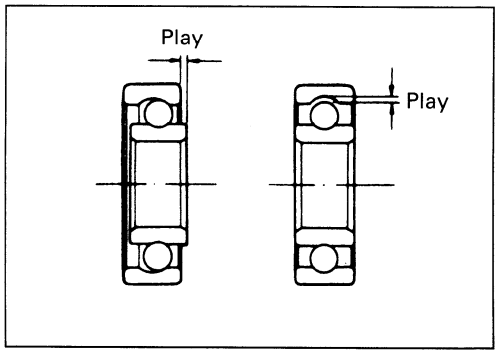
TOOL 09920-13120: Crankshaft remover (Crankcase separating tool)



ENGINE COMPONENTS INSPECTION AND SERVICE

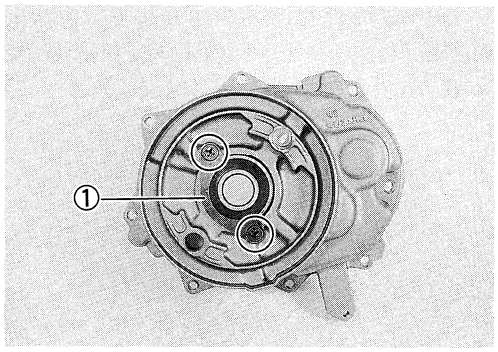
BEARINGS

Wash the bearing with a cleaning solvent and lubricate it with motor oil before inspection. Turn the inner ring and check to see that it turns smoothly. If it does not turn quietly and smoothly, the bearing is defective and must be replaced with a new one.



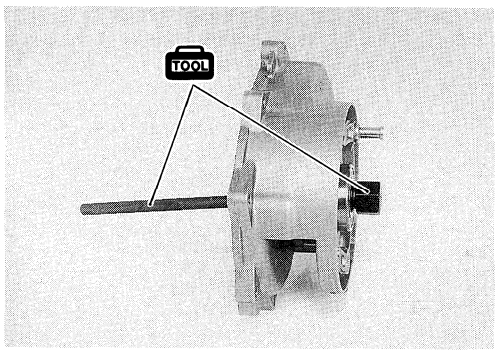
REAR AXLE SHAFT BEARING

- Remove the bearing retainer ①.



- Remove the rear axle shaft bearing with the special tool.

TOOL 09941-50111: Bearing remover

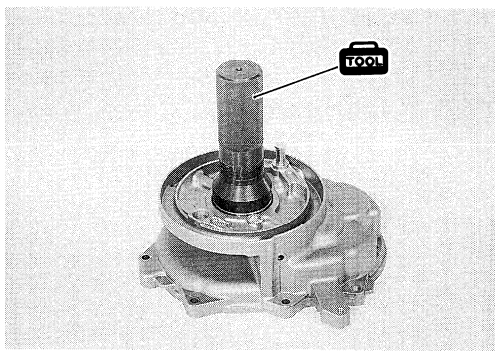


⚠ CAUTION

The removed bearing should be replaced with a new one.

- Install the new, rear axle shaft bearing with the special tool.

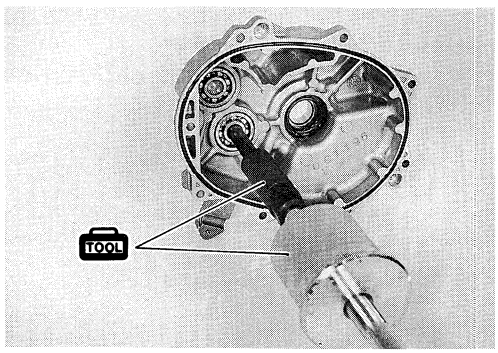
TOOL 09913-76010: Bearing installer



RIGHT DRIVESHAFT BEARING AND IDLE SHAFT BEARING

- Remove the right driveshaft bearing and idle shaft bearing with the special tools.

TOOL 09921-20210: Bearing remover
09930-30102: Sliding shaft

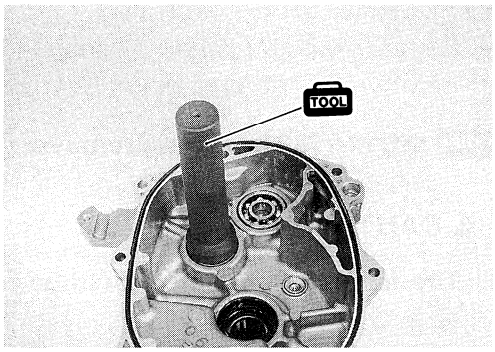


⚠ CAUTION

The removed bearings should be replaced with new ones.

- Install the new, right driveshaft bearing and new, idle shaft assembly bearing with the special tool.

TOOL 09913-75821: Bearing installer



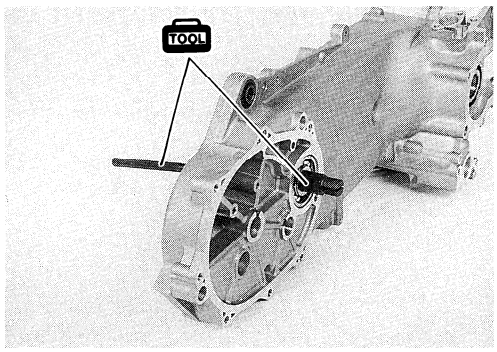
LEFT DRIVESHAFT BEARING

- Remove the left driveshaft bearing with the special tool.

TOOL 09941-50111: Bearing remover

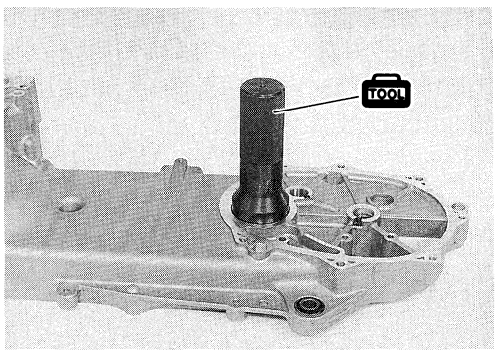
⚠ CAUTION

The removed bearing should be replaced with a new one.



- Install the new, left driveshaft bearing with the special tool.

TOOL 09943-88211: Bearing remover



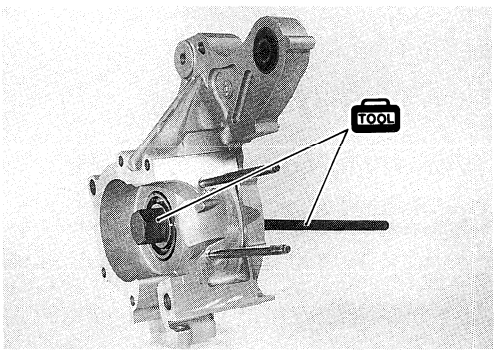
RIGHT CRANKSHAFT BEARING

- Remove the right crankshaft bearings with the special tools.

TOOL 09941-50111: Bearing remover

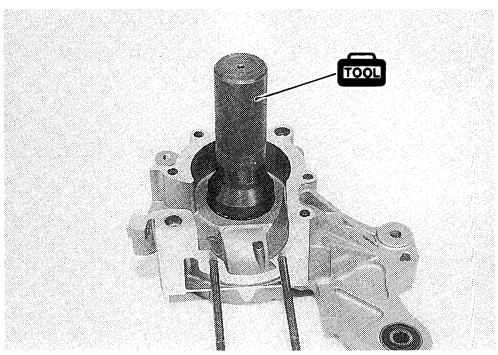
⚠ CAUTION

The removed bearing should be replaced with a new one.



- Install the new, right crankshaft bearing with the special tool.

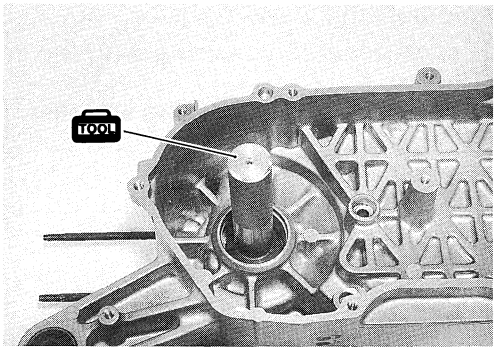
TOOL 09913-76010: Bearing installer



LEFT CRANKSHAFT BEARING

- Remove the crankshaft oil seals. (Refer to page 3-16.)
- Remove the left crankshaft bearing with the special tool.

09913-75821: Bearing remover (Bearing installer)

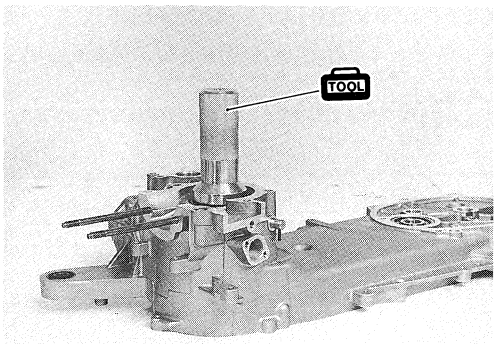


⚠ CAUTION

The removed bearing should be replaced with a new one.

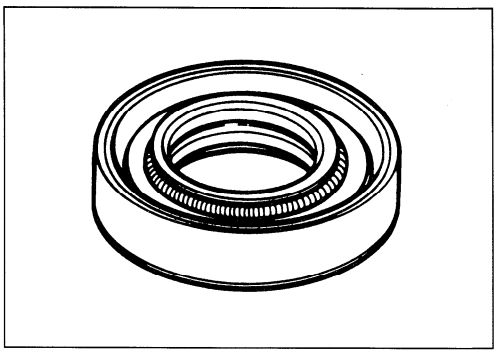
- Install the new, left crankshaft bearing with the special tool.

09913-75810: Bearing installer



OIL SEALS

Damage to the lip of the oil seal may result in leakage of the fuel-air mixture or gear oil. Inspect the oil seal and if it is damaged, replace it with a new one.



Install the oil seals into the crankcase and gear box cover, as shown below.

⚠ CAUTION

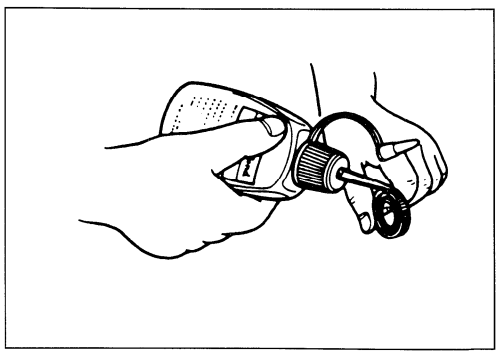
The removed oil seal should be replaced with a new one.

- Apply grease to the lip of the oil seals.

99000-25010: SUZUKI SUPER GREASE "A"

- Be sure to apply THREAD LOCK "1342" to the outer surfaces of the right and left crankshaft oil seals to prevent them from moving.

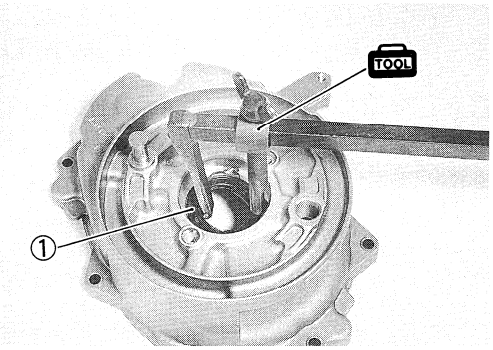
99000-32050: THREAD LOCK "1342"



REAR AXLE SHAFT OIL SEAL

- Remove the rear axle shaft bearing. (Refer to page 3-13.)
- Remove the rear axle shaft oil seal ① from the gear box cover with the special tool.

TOOL 09913-50121: Oil seal remover

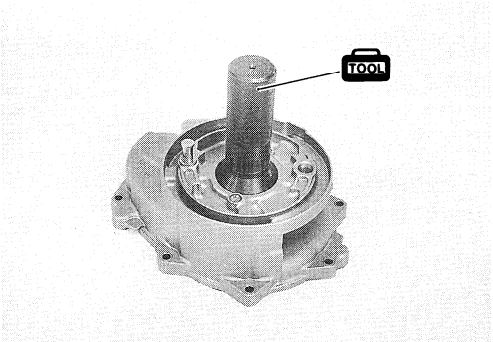


⚠ CAUTION

The removed oil seal should be replaced with a new one.

- When installing the rear axle shaft oil seal into the gear box cover, insert it slowly, with the special tool.

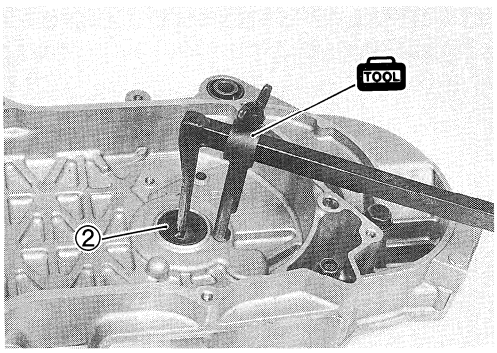
TOOL 09913-76010: Oil seal installer (Bearing installer)



DRIVE SHAFT OIL SEAL

- Remove the drive shaft oil seal ② from the left crankcase with the special tool.

TOOL 09913-50121: Oil seal remover

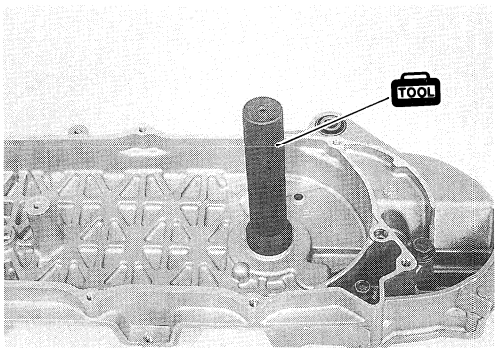


⚠ CAUTION

The removed oil seal should be replaced with a new one.

- When installing the drive shaft oil seal into the left crankcase, insert it slowly, with the special tool.

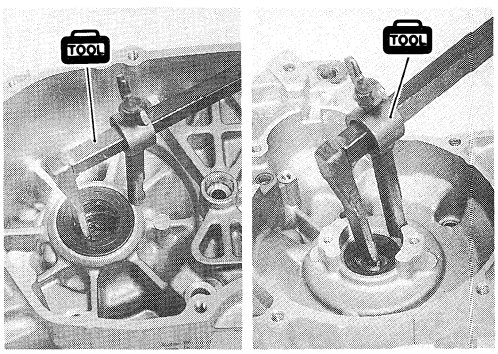
TOOL 09913-75821: Oil seal installer (Bearing installer)



CRANKSHAFT OIL SEALS

- Remove the crankshaft oil seals from the left and right crankcase, with the special tool.

TOOL 09913-50121: Oil seal remover

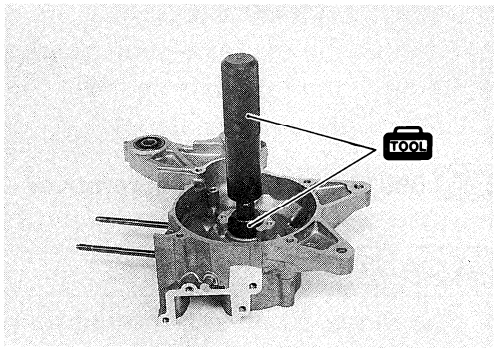


⚠ CAUTION

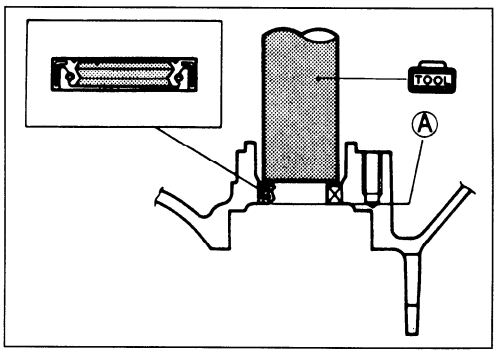
The removed oil seals should be replaced with new ones.

- When installing the crankshaft oil seal into the right crankcase, insert it slowly, with the special tools.

09924-74510: Oil seal installer handle (Bearing remover)
09924-74540: Oil seal installer attachment (Bearing installer pilot)



NOTE:
Align the oil seal with edge Ⓐ of the crankcase, as shown in the illustration.

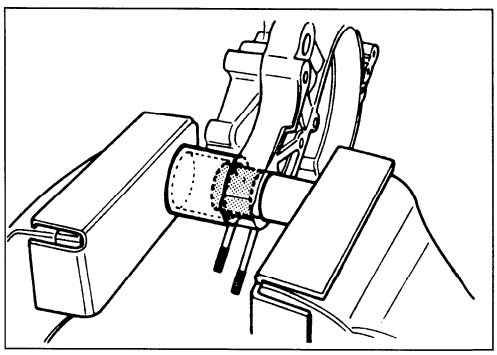


NOTE:
Install the left crankcase oil seal, after installing the crankshaft to the crankcase. (Refer to page 3-30.)

ENGINE MOUNTING BUSHINGS

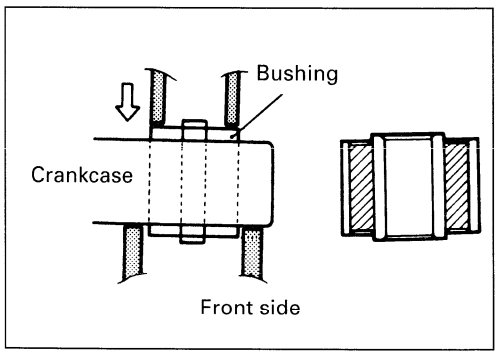
Inspect each engine mounting bushing for damage.
If any damage is found, replace the engine mounting bushing with a new one.

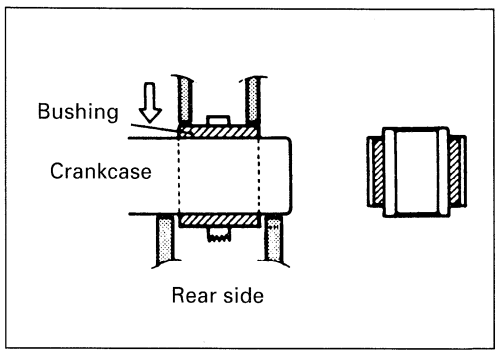
- Using two steel tubes of the appropriate size, press out the engine mounting bushings in a vise, as shown in the illustration.



⚠ CAUTION

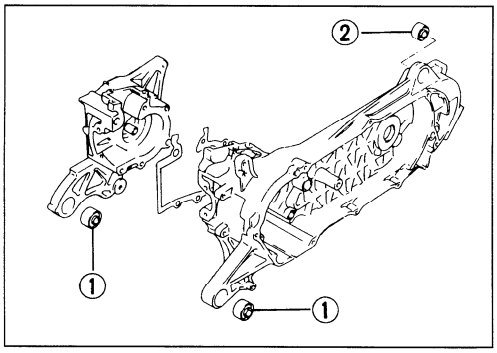
The removed bushing should be replaced with a new one.

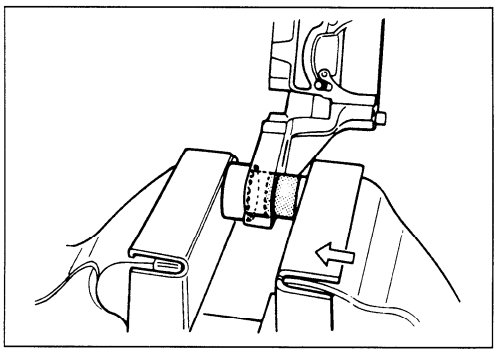


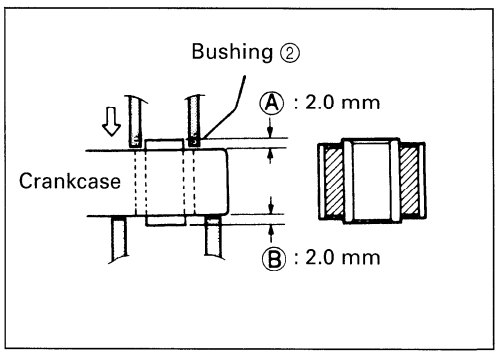


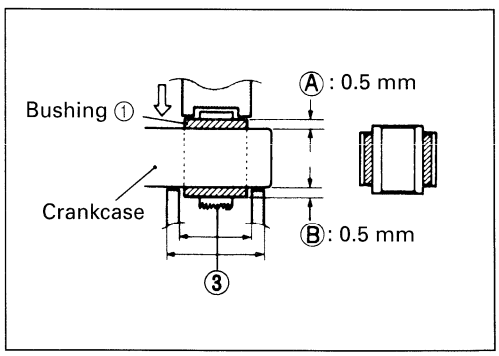
When installing the engine mounting bushings, use two steel tubes of the appropriate size and a vise. Press the mounting bushings ① and ② into the crankcase holes, as shown in the illustration.

NOTE:
The knurled end ③ should face in. Projections Ⓐ and Ⓑ should be aligned evenly.

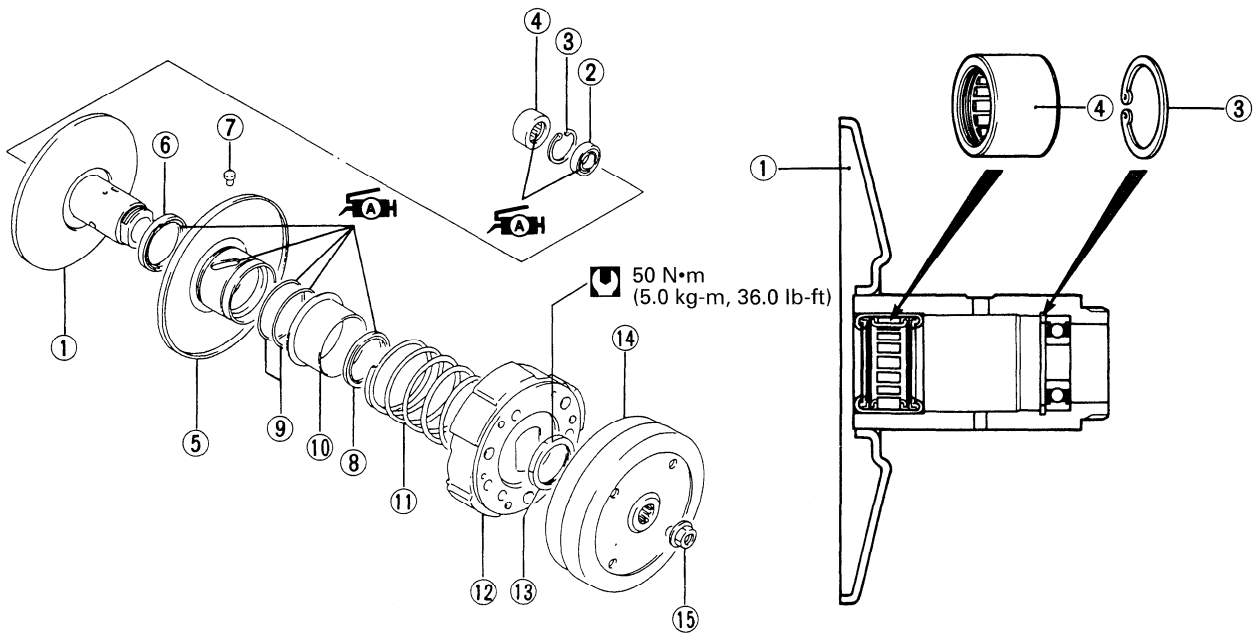








CLUTCH SHOE/MOVABLE DRIVEN FACE



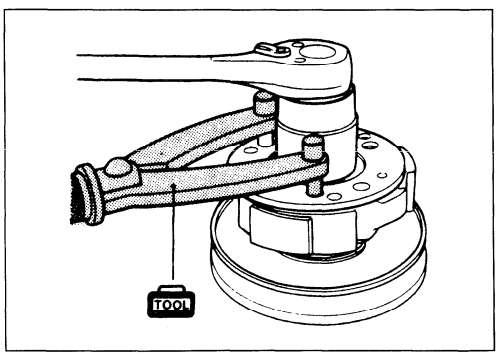
① Fixed drive face
② Bearing
③ Circlip
④ Needle roller bearing
⑤ Movable driven face
⑥ Oil seal
⑦ Pin
⑧ Oil seal
⑨ O-ring
⑩ Movable driven face spring guide
⑪ Spring
⑫ Clutch shoe assembly
⑬ Clutch shoe nut
⑭ Clutch housing
⑮ Nut

DISASSEMBLY

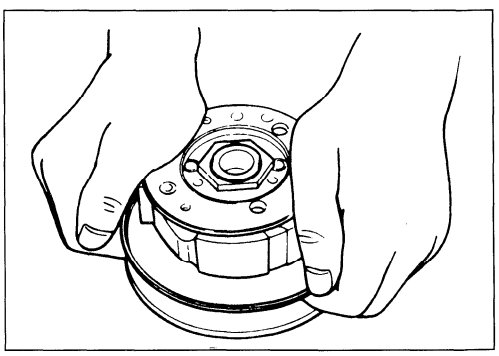
If the engine rpm does not coincide with the specified rpm range, then disassemble the clutch shoe/movable driven face as follows.

- Loosen the clutch shoe nut with the special tool.

TOOL 09930-40113: Rotor holder



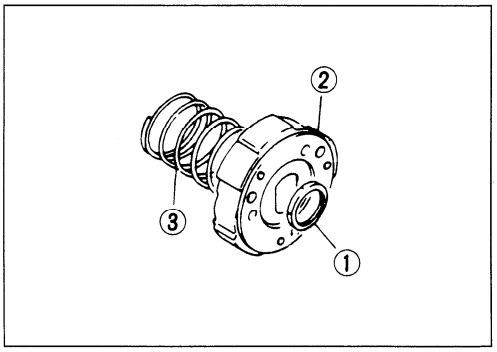
- Remove the clutch shoe nut while holding down the clutch shoe assembly, as shown in the illustration.



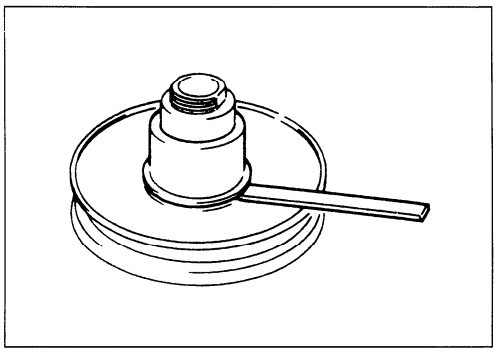
⚠ WARNING

Gradually ease apart the clutch shoe assembly (to counter the clutch spring force). Quickly releasing the clutch shoe assembly may cause the parts to fly apart.

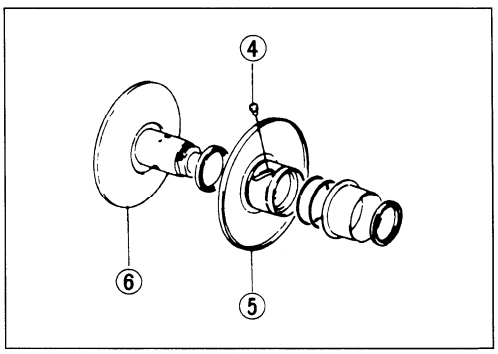
① Nut
② Clutch shoe assembly
③ Spring



- Use a thin-blade screwdriver to pry up the movable driven face spring guide.

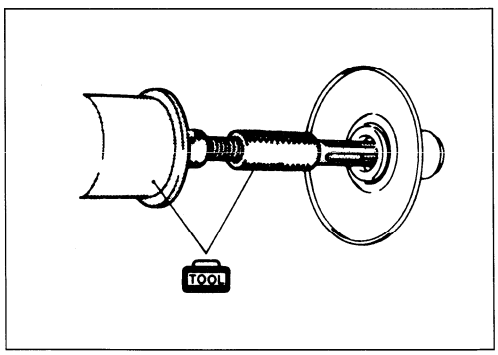


- Remove the pins ④, movable driven face ⑤, and fixed driven face ⑥.



- Remove the bearing with the special tools.

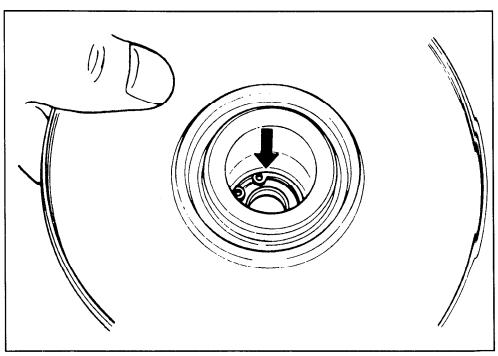
TOOL **09923-73210: Bearing remover**
09930-30102: Sliding shaft



⚠ CAUTION

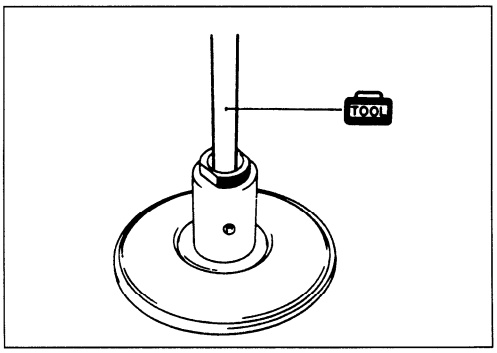
The removed bearing should be replaced with a new one.

- Remove the circlip.



- Remove the bearing with the special tool.

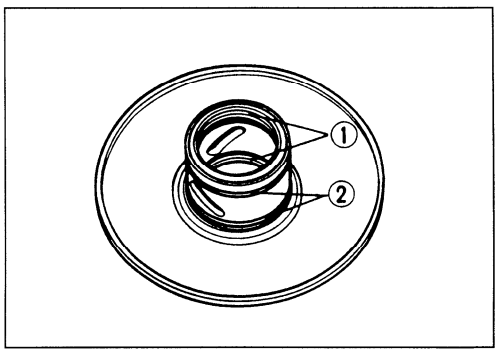
TOOL 09941-50111: Bearing remover



⚠ CAUTION

The removed bearing should be replaced with a new one.

- Remove the oil seals ① and O-rings ②.



⚠ CAUTION

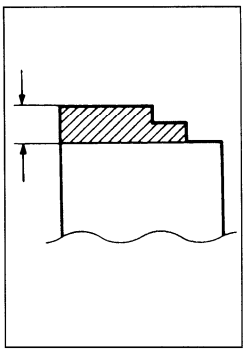
The removed oil seals and O-rings should be replaced with new ones.

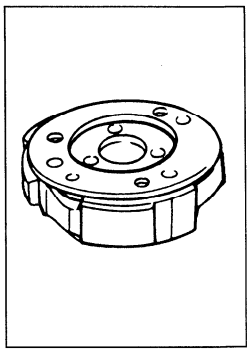
CLUTCH SHOES

Inspect the clutch shoes for chips, cracks, uneven wear and burning, and check the thickness of the shoes with vernier calipers. If the thickness is less than the service limit, replace the clutch shoes as a set.

TOOL 09900-20101: Vernier calipers

Service Limit: 2.0 mm (0.08 in)





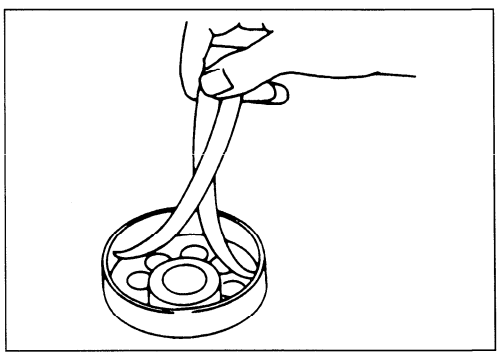
Inspect the clutch springs for stretched or broken coils.

⚠ CAUTION

Clutch shoes or springs must be replaced as a set.

Inspect the clutch housing surface for scrolling, cracks, or uneven wear. Measure the inside diameter of the clutch housing with inside calipers. Measure the diameter at several points to check for out-of-round and wear.

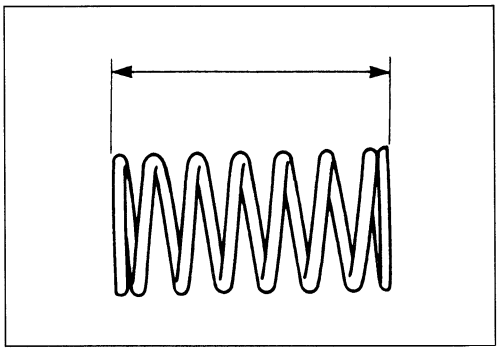
Service Limit: 110.50 mm (4.350 in)



DRIVEN FACE SPRING

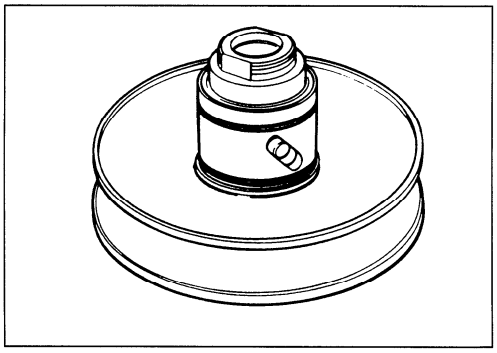
Measure the free length of the driven face spring. If the length is shorter than the service limit, replace the spring with a new one.

Service Limit: AY50 (p-02, 04, 22, 37 and 39): 104.5 mm (4.11 in)
AY50 (P-26, 34 and 53) and AY50W: 71.6 mm (2.82 in)



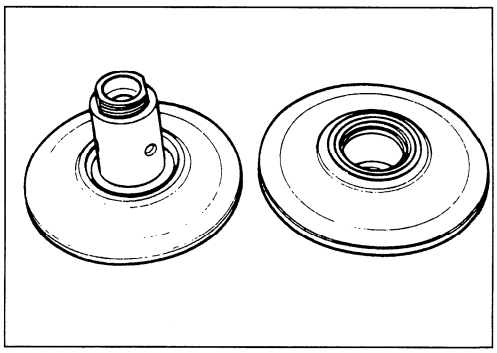
DRIVEN FACE PINS AND OIL SEALS

Turn the driven faces and make sure that they turn smoothly.
If they stick or do not turn smoothly, inspect the lip of each oil seal, and the sliding surface and sliding pins for wear or damage.



DRIVEN FACE

Inspect the drive belt contacting surface of both driven faces for any scratches, wear or damage.
Replace the driven face if there is any wear or damage.

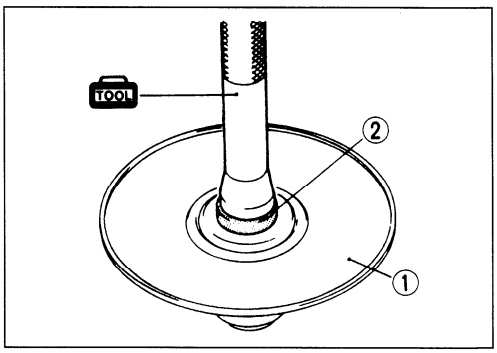


REASSEMBLY

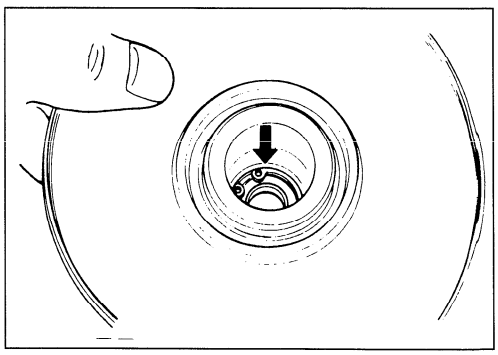
Reassemble the clutch shoe assembly and movable driven face in the reverse order of disassembly. Pay attention to the following points.

- Install the bearing ② in the fixed driven face ① with the special tool.

TOOL 09943-88211: Bearing installer



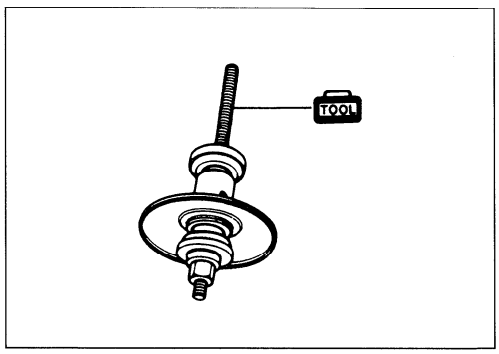
- Securely install the circlip.



- Install the needle roller bearing with the special tool.

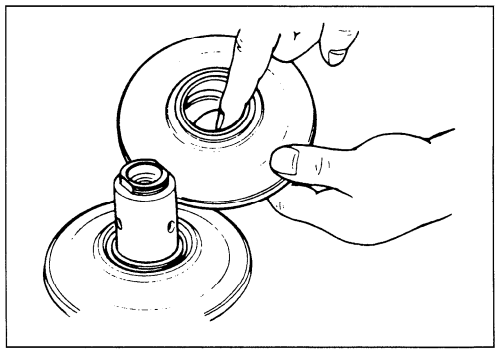
TOOL 09924-84521: Bearing installer

NOTE:
Face the stamped side of the needle roller bearing out.



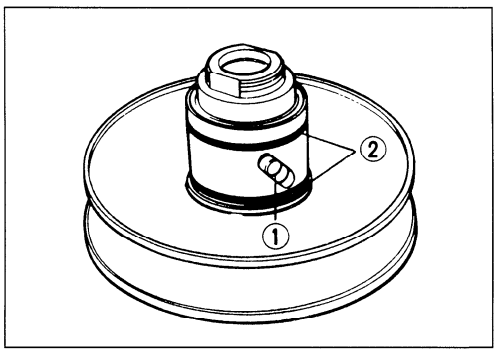
- Apply grease between the sliding surface of the fixed driven face and movable driven face.

99000-25010: SUZUKI SUPER GREASE "A"



NOTE:
When installing the movable face to the fixed face, make sure that the oil seal is positioned properly.

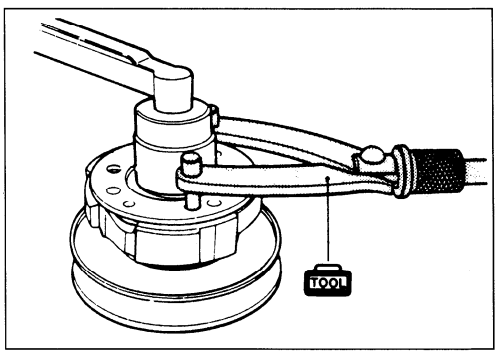
- Install the pins ① at three places on the drive face hub.
- Apply grease lightly to the cam part where the pins are placed.
- Position the two O-rings ②.



- Tighten the clutch shoe nut to the specified torque with the special tool.

09930-40113: Rotor holder

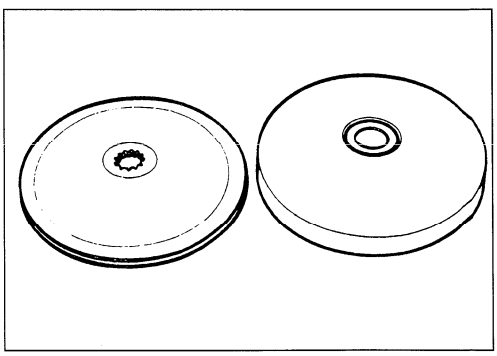
Clutch shoe nut: 50 N·m (5.0 kg-m, 36.0 lb-ft)



MOVABLE DRIVE FACE

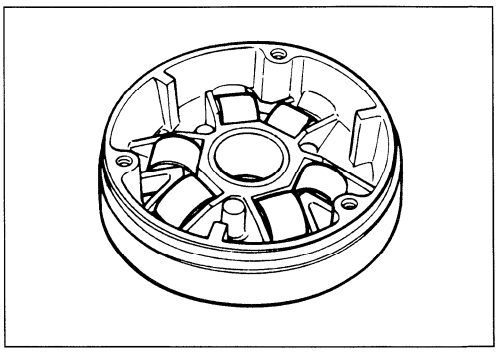
DRIVE FACE

Inspect the belt contact surface of the drive faces for wear, scratches or any abnormalities. Replace the drive face if there is any wear or damage.



ROLLER AND SLIDING SURFACE

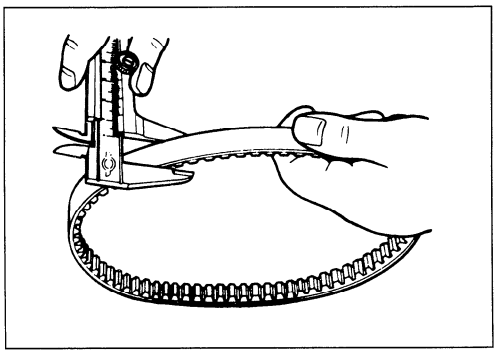
Inspect each roller and its sliding surface for wear or damage.



DRIVE BELT

Remove the drive belt and check for cracks, wear and separation. Measure the drive belt width with vernier calipers. Replace the drive belt if its width is less than the service limit or if any defects are found.

Service Limit: 16.0 mm (0.63 in)



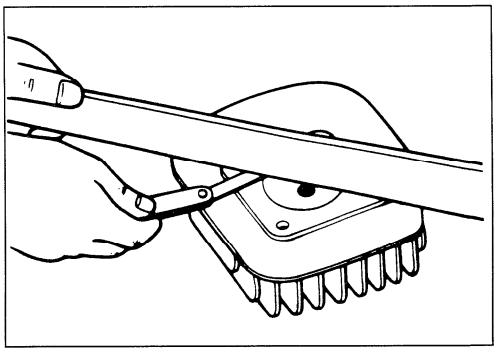
⚠ CAUTION

Always keep the drive belt away from grease, oil, etc.

CYLINDER HEAD

Remove carbon from the combustion chamber and clean the cylinder head.

Check the gasket surface of the cylinder head for distortion. Use a straightedge and thickness gauge. Take clearance readings at several places.

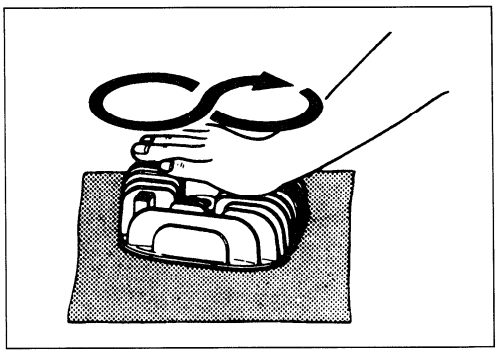


TOOL 09900-20803: Thickness gauge

Service Limit: 0.05 mm (0.002 in)

If clearance readings exceed the service limit, flatten the cylinder head. Place a sheet of emery paper (about #400 grit) on a surface plate. Use a figure-eight motion when grinding the cylinder head surface.

The gasket surface must be smooth and perfectly flat, for a tight fit. A leaky joint can be the cause of reduced power and increased fuel consumption.

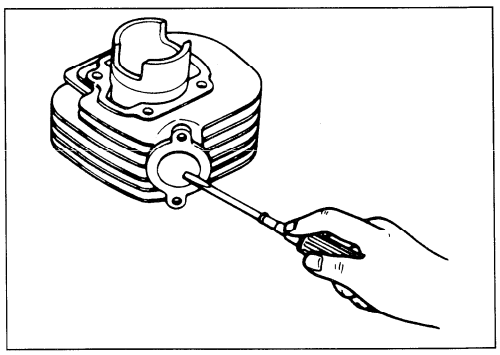


CYLINDER

Remove carbon from the exhaust port and the upper part of the cylinder. Take care not to damage the surface of the cylinder wall.

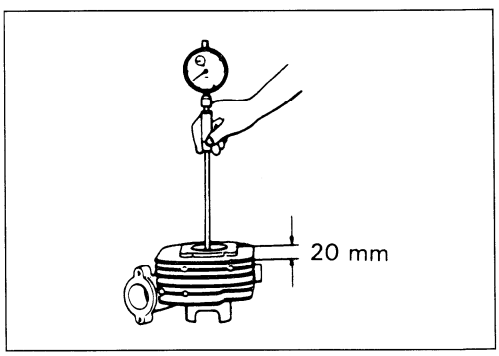
Measure the cylinder bore with the cylinder gauge at 20 mm (0.8 in) from the top of the cylinder.

Rebore the cylinder when the cylinder bore exceeds the service limit. Oversized pistons are available in two sizes: 0.5 mm and 1.0 mm.



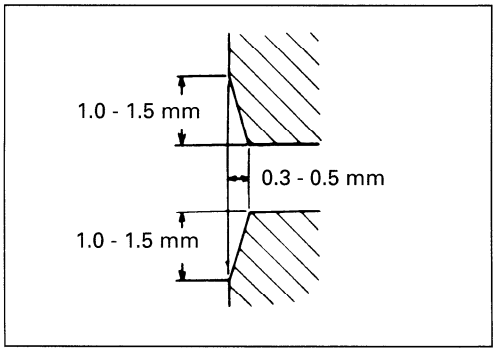
TOOL 09900-20508: Cylinder gauge set

Service Limit: 41.075 mm (1.6171 in)···AY50
41.105 mm (1.6183 in)···AY50W



Chamfer the port edges after reboring. Use a scraper and take care not to nick the surface of the walls. Use emery paper to smooth the chamfered edges.

NOTE:
Shallow grooves or minor scuffs can be removed by using emery paper (about #400). If the flaws are deep grooves or cannot be removed with the emery paper, the cylinder must be rebored to the next oversize.



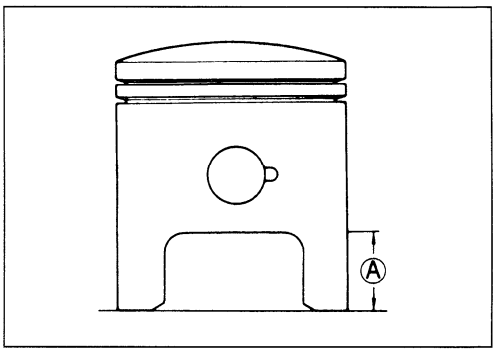
PISTON

PISTON DIAMETER

Measure the piston diameter with a micrometer at Ⓐ from the skirt end.

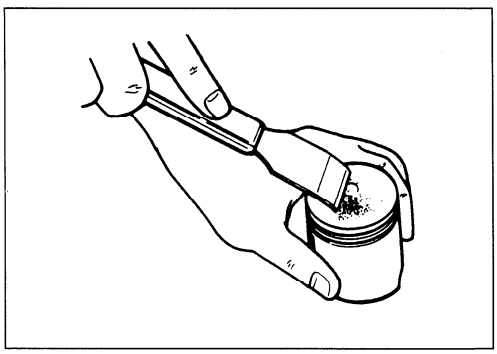
Ⓐ AY50 : 15 mm (0.6 in)
AY50W : 23 mm (0.9 in)

If the piston diameter is less than the service limit, replace the piston.



TOOL 09900-20202: Micrometer (25 - 50 mm)

Service Limit: 40.885 mm (1.6096 in)···AY50
40.890 mm (1.6098 in)···AY50W

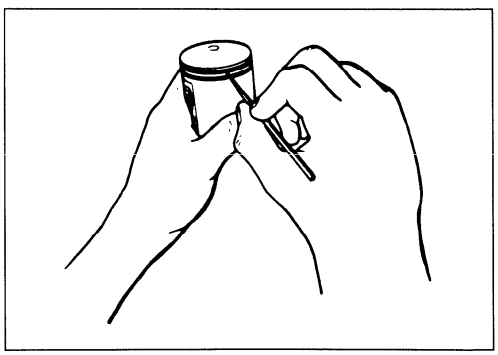


PISTON-CYLINDER CLEARANCE

Subtract the piston diameter from the cylinder bore. If the piston-to-cylinder clearance exceeds the service limit, rebore the cylinder and use an oversized piston or replace both the cylinder and the piston.

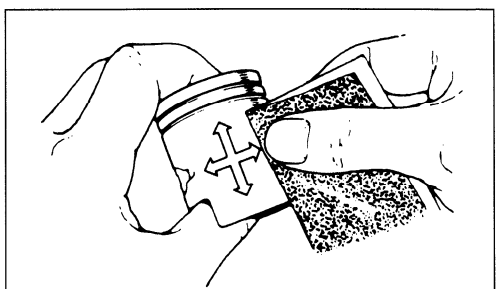
Unit: mm

		STD	Service Limit
Cylinder	AY50	41.005 – 41.020	41.075
	AY50W	41.010 – 41.025	41.105
Piston	AY50	40.940 – 40.955	40.885
	AY50W	40.970 – 40.985	40.890
Cylinder to piston	AY50	0.06 – 0.07	0.120
	AY50W	0.035 – 0.045	



CARBON REMOVAL

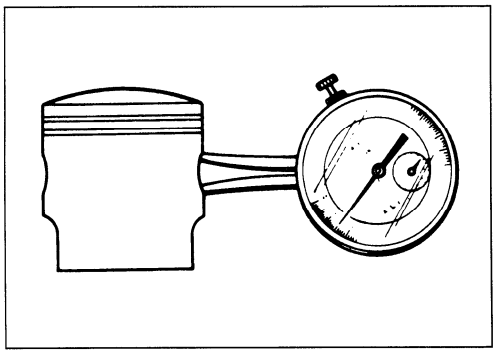
Remove the carbon from the crown of the piston and piston ring grooves. After cleaning the piston ring grooves, install the piston rings and rotate them in their respective grooves to be sure that they move smoothly.
Carbon in the piston ring groove can cause the piston ring to get stuck, reducing engine power output.
Replace a scuffed piston.
Shallow grooves or minor scuffs can be removed by using emery paper (about #400)



Smoothening the sliding surface with emery paper.

PISTON PIN BORE

Measure the piston pin bore inside diameter and use a micrometer to measure the piston pin outside diameter. If either is out of specification or the difference between these two measurements is more than the limits, replace both the piston and piston pin.

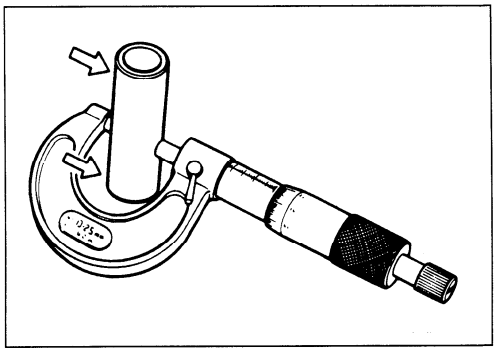


TOOL 09900-20605: Dial calipers

Service Limit: 10.030 mm (0.3949 in)···AY50
12.030 mm (0.4736 in)···AY50W

PISTON PIN O.D.

Using a micrometer, measure the piston pin outside diameter at three positions. If any of the measurements are out of specification, replace the piston and piston pin.

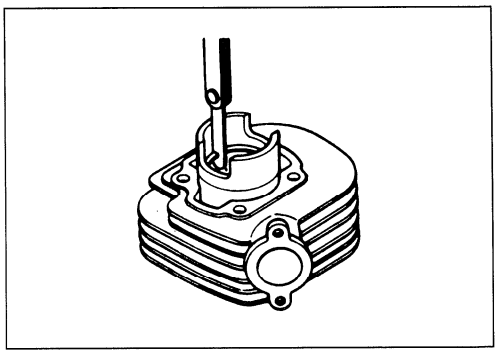


TOOL 09900-20205: Micrometer (0 - 25 mm)

Service Limit: 9.980 mm (0.3929 in)···AY50
11.980 mm (0.4717 in)···AY50W

PISTON RINGS

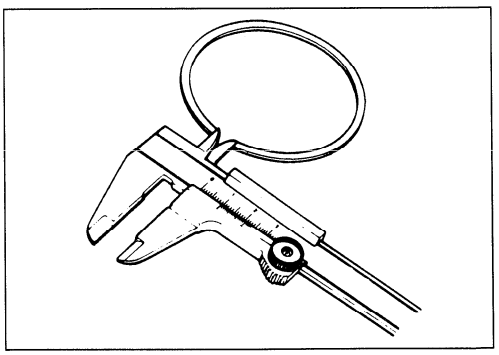
Use vernier calipers to measure the piston ring free end gap. Next, fit the piston ring squarely into the cylinder and measure the piston ring end gap with a thickness gauge.
If any of the measurements exceed the service limit, replace the piston ring with a new one.



TOOL 09900-20101: Vernier calipers
09900-20803: Thickness gauge

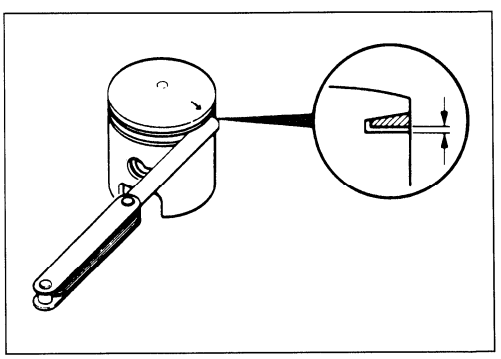
Piston ring free end gap
Service Limit:

AY50:	**3.2 mm (0.126 in)···1st**
	3.4 mm (0.134 in)···2nd
AY50W:	**3.6 mm (0.14 in)···T**
(1st & 2nd)	**2.4 mm (0.10 in)···N**



Piston ring end gap
Service Limit: 0.80 mm (0.031 in)

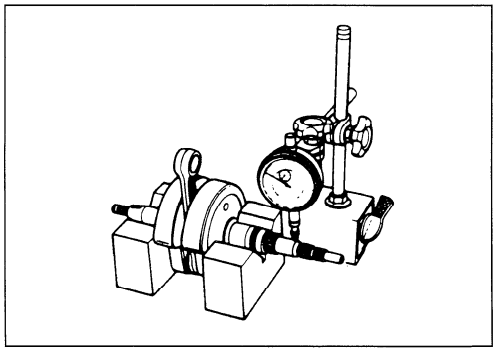
Install the piston ring into the piston ring groove. Insert the thickness gauge under the piston ring and measure the piston ring side clearance.
If any of the measurements exceed the service limit, replace both the piston and piston rings.



STD Clearance:

AY50:	**0.03 – 0.07 mm (0.0012 – 0.0028 in)···1st**
	0.02 – 0.06 mm (0.0008 – 0.0024 in)···2nd
AY50W:	**0.01 – 0.05 mm (0.0004 – 0.0020 in)···1st & 2nd**

CRANKSHAFT



CRANKSHAFT RUNOUT

Support the crankshaft with V-blocks. Measure the runout with a dial gauge.

Service Limit: 0.05 mm (0.002 in)

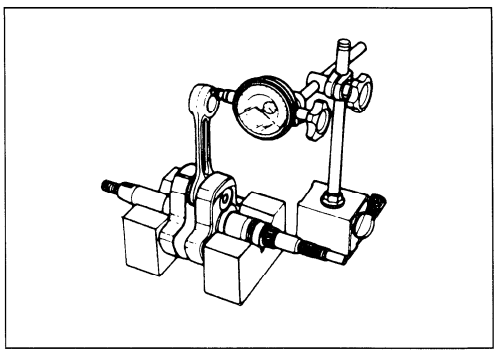
Excessive crankshaft runout is often responsible for abnormal engine vibration. Such vibration will shorten the life of the engine.

TOOL **09900-21304: V-block (100 mm)**
09900-20701: Magnetic stand
09900-20606: Dial gauge (1/100 mm)

CONDITION OF THE BIG END BEARING

Hold the crankshaft and move the conrod up and down. Check that the rotary motion in the big end is smooth and no abnormal noises are heard.
By checking the movement of the small end of the conrod, big end wear can be estimated. The extent of wear on the big end parts can also be checked.
If the wear exceeds the service limit, the conrod, crank pin and crank pin bearing should all be replaced.

Service Limit: 3.0 mm (0.12 in)

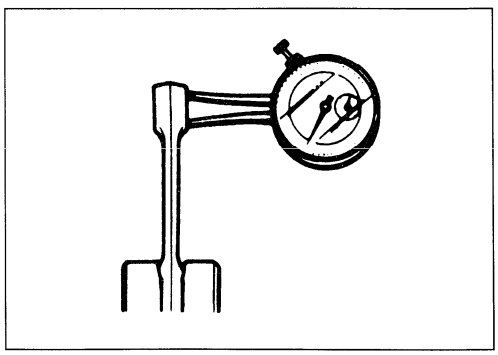


CONROD SMALL END I.D.

Measure the conrod small end inside diameter with the dial calipers.
If the conrod small end inside diameter exceeds the service limit, replace the conrod.

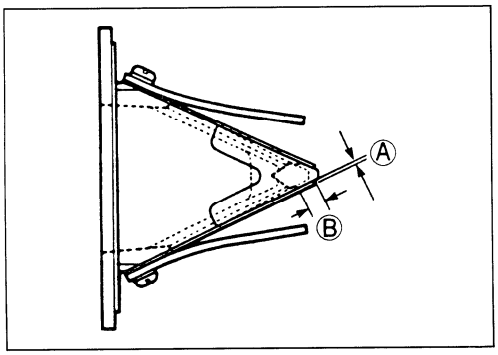
Service Limit: 14.040 mm (0.5528 in)...AY50
16.040 mm (0.6315 in)...AY50W

TOOL **09900-20605: Dial calipers**



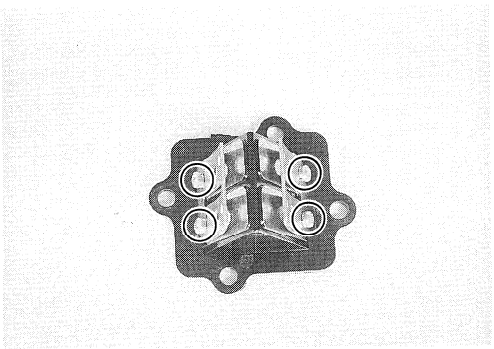
REED VALVE

Measure clearance Ⓐ between the reed valve and its seat and dimension Ⓑ. If clearance Ⓐ exceeds 0.2 mm (0.08 in), replace the reed valve. Dimension Ⓑ is at least 1 mm (0.04 in).



Apply THREAD LOCK "1342" to the reed valve mounting screws.

1342 99000-32050: THREAD LOCK "1342"

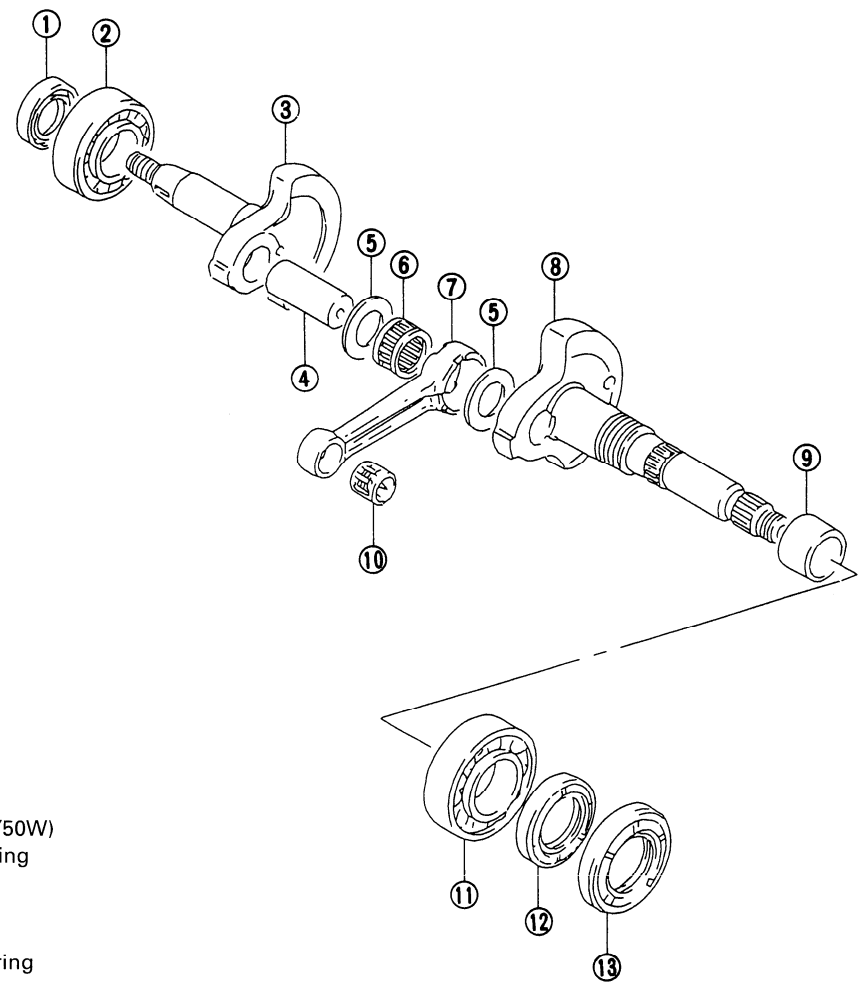


ENGINE REASSEMBLY

Reassemble the engine in the reverse order of disassembly. The following steps require special attention or precautionary measures should be taken.

NOTE:
Apply engine oil to each running and sliding part before reassembling.

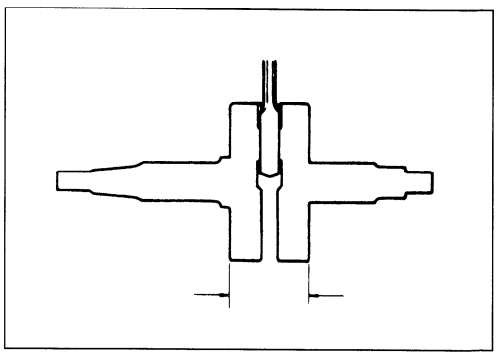
CRANKSHAFT



① Oil seal (R)
② Bearing (R)
③ Crankshaft (R)
④ Crank pin
⑤ Spacer (For AY50W)
⑥ Crank pin bearing
⑦ Conrod
⑧ Crankshaft (L)
⑨ Spacer
⑩ Piston pin bearing
⑪ Bearing (L)
⑫ Oil seal (L)
⑬ Oil seal

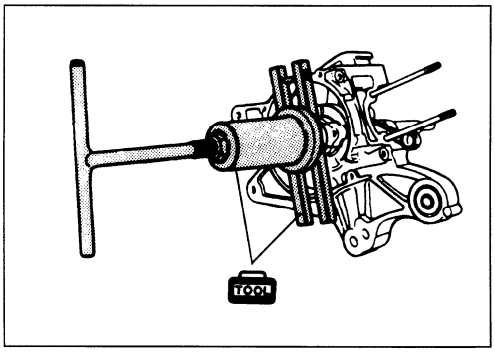
- When rebuilding the crankshaft, the width between the webs should be within the specified range.

Standard width between webs:
36.0 ± 0.05 mm (1.4173 ± 0.0020 in)...AY50
38.0 ± 0.05 mm (1.4961 ± 0.020 in)...AY50W



- When mounting the crankshaft into the right crankcase, it is necessary to pull its right end into the crankcase with the special tools.

TOOL 09910-32812: Crankshaft installer
09910-20116: Conrod holder

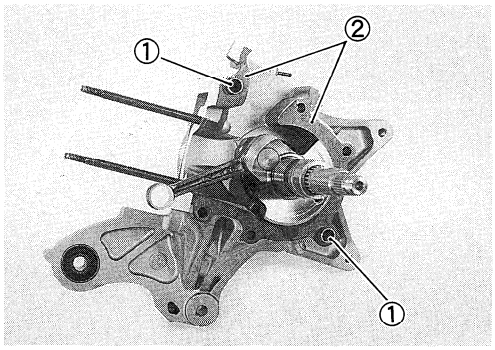


⚠ CAUTION

Never fit the crankshaft into the crankcase by striking it with a plastic hammer. Always use the special tool, otherwise the crankshaft may be misaligned.

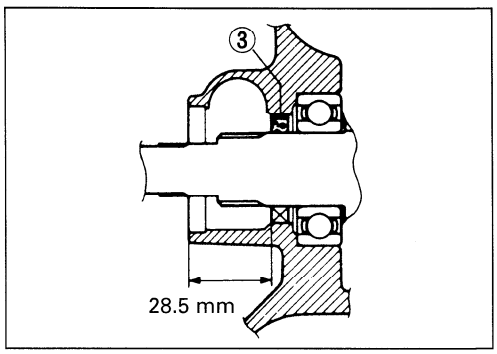
CRANKCASE

- Install the two dowel pins ① and new gasket ②.
- Install the left crankcase onto the right crankcase.



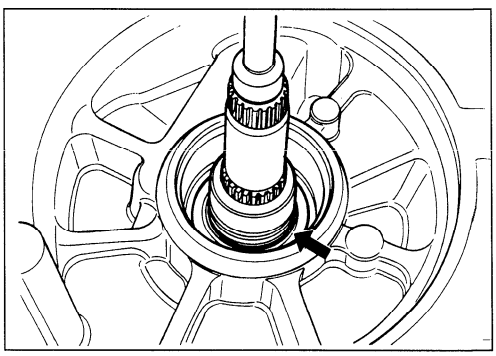
- Tighten the crankcase bolts.
- Install the new oil seal ③ with the special tool, as shown in the illustration.

TOOL 09941-74910: Oil seal installer
(Bearing installer)



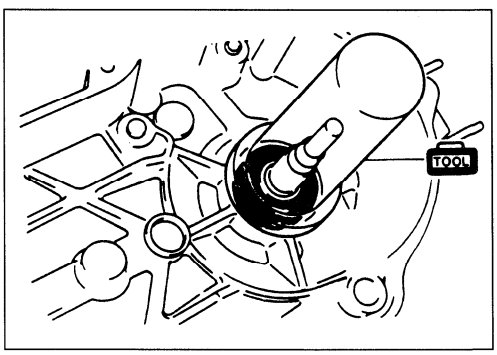
- Apply SUZUKI SUPER GREASE "A" (approx. 10 g) to the oil pump drive gear (on the crankshaft surface side).

A 99000-25010: SUZUKI SUPER GREASE "A"

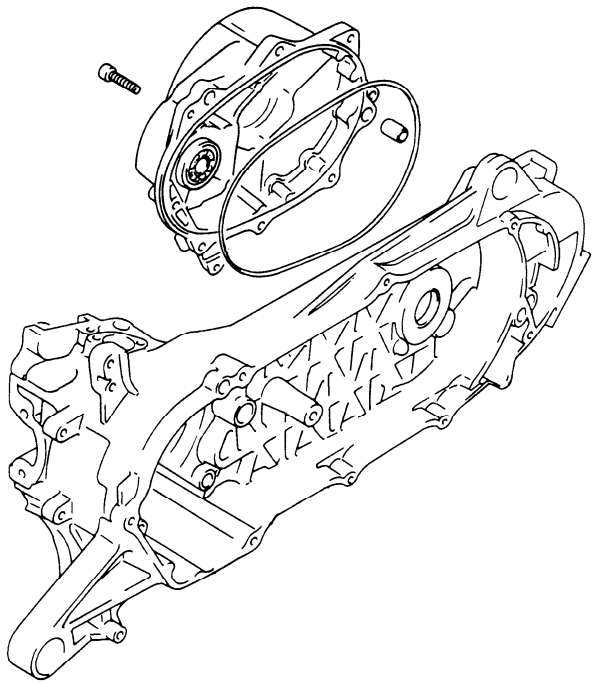


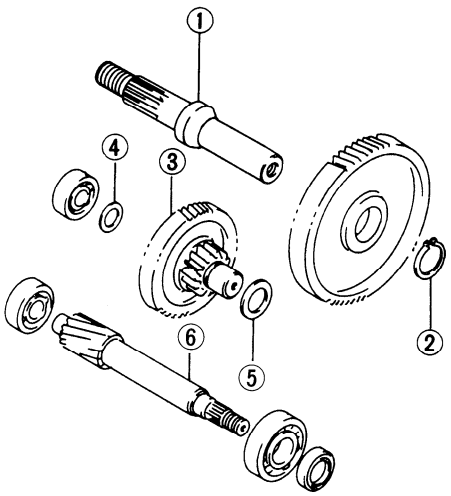
- Install the new oil seal with the special tool.

TOOL 09951-16080: Oil seal installer
(Bearing installer)



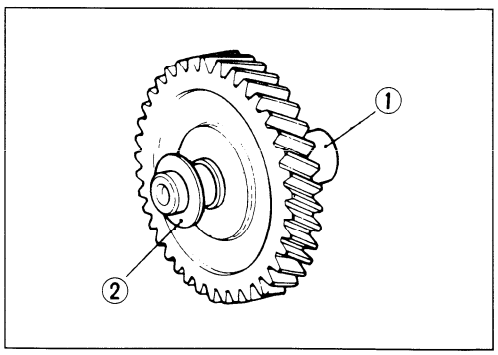
REAR AXLE SHAFT AND TRANSMISSION



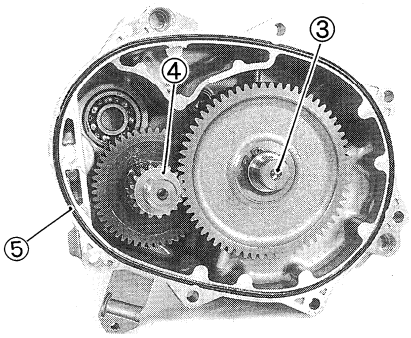


① Rear axle shaft/final driven gear
② Circlip
③ Idle shaft/gear
④ Washer
⑤ Washer
⑥ Drive shaft

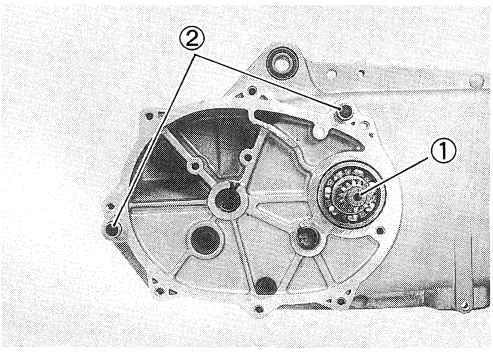
- Install the idle shaft/gear ①, with the thrust washer ②, into the gear box.



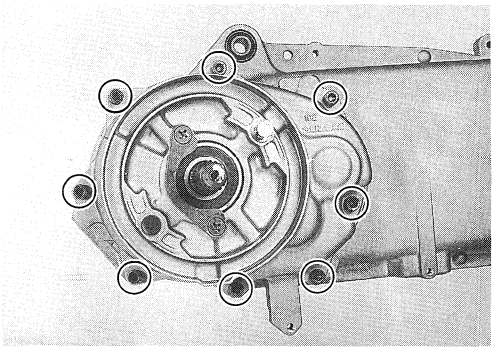
- Install the rear axle shaft with the final driven gear ③.
- Install the thrust washer ④.
- Install the new O-ring ⑤.



- Install the driveshaft ①.
- Install the dowel pins ②.

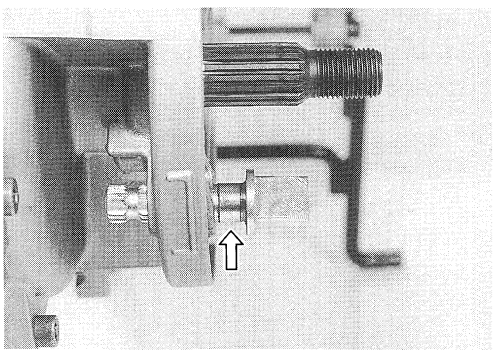


- Install the gear box cover.
- Tighten the bolts, a little at a time, in a crisscross pattern.

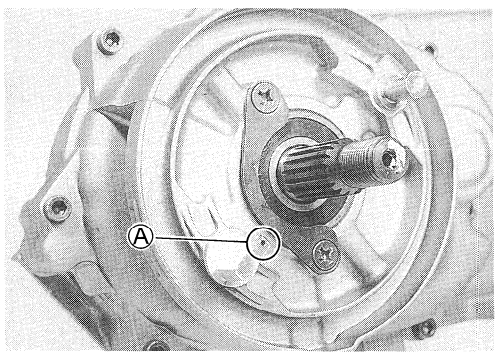


- Apply a light coat of grease onto the pivoting surface of the brake cam and then install the brake cam into the crankcase.

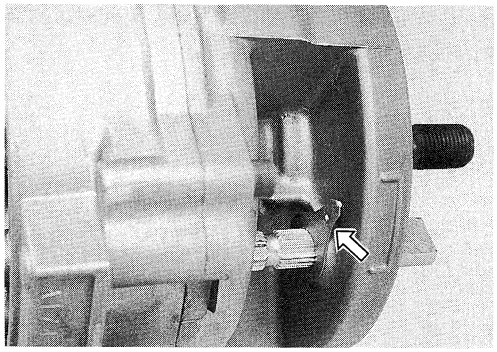
99000-25010: SUZUKI SUPER GREASE "A"

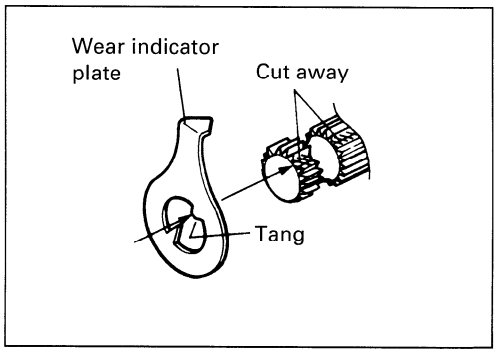


- Position the brake cam so that the punch mark Ⓐ faces the rear axle shaft.



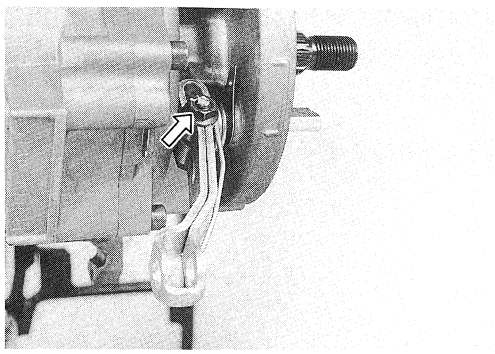
- Align the tang on the brake lining wear indicator plate with the cutaway on the brake cam. Then, slide the brake lining wear indicator plate onto the brake cam.





- Install the return spring and brake cam lever onto the brake cam and tighten the brake cam lever nut to the specified torque.

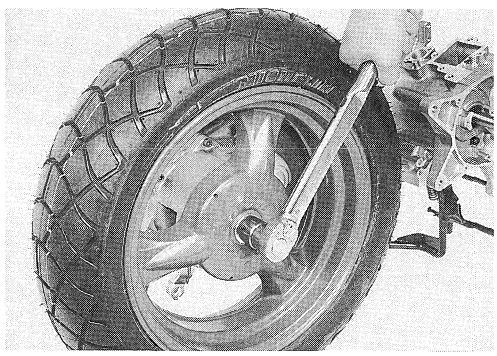
Brake cam lever nut: 10 N·m (1.0 kg-m, 7.0 lb-ft)



- Install the brake shoes.
- Install the rear wheel.
- Tighten the rear axle nut to the specified torque.

Rear axle nut: 75 N·m (7.5 kg-m, 54.0 lb-ft)

- Install the rear fender.



- Tighten the final gear oil drain bolt ①.

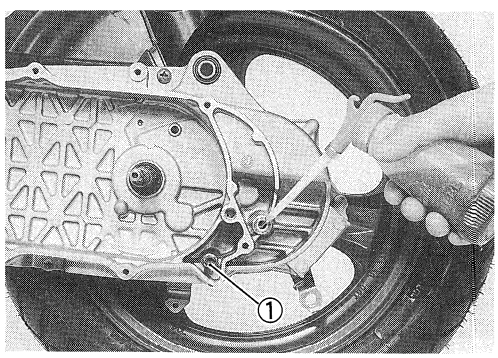
Final gear oil drain bolt: 5.5 N·m (0.55 kg-m, 4.0 lb-ft)

- Add final gear oil until it flows from the final gear oil level hole.

Final gear oil quantity: 130 ml (1.1 Imp oz)

- Tighten the final gear oil level bolt to the specified torque.

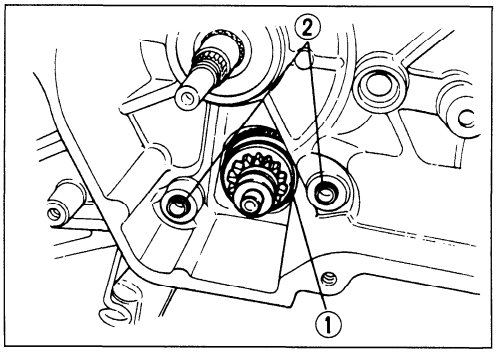
Oil level bolt: 12 N·m (1.2 kg-m, 8.5 lb-ft)



STARTER PINION AND STARTER GEAR

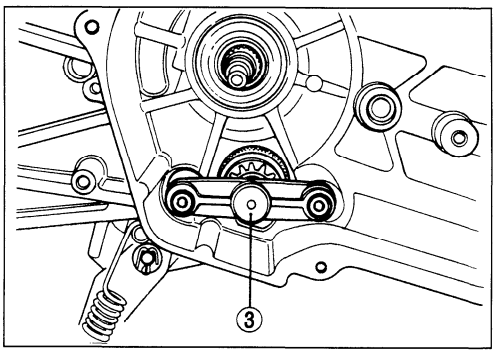
- Apply grease onto the starter pinion shaft and install the starter pinion gear assembly.
- Assemble the starter pinion gear assembly ①.

99000-25010: SUZUKI SUPER GREASE "A"



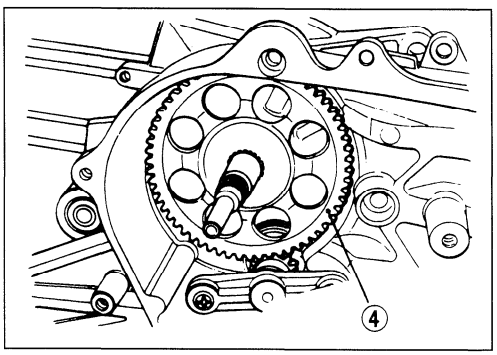
- Insert the dowel pins ②.

- Install the starter idle gear cap ③.



- Install the starter driven gear ④ onto the left crankshaft.

NOTE:
The convex side of the starter driven gear should face out.

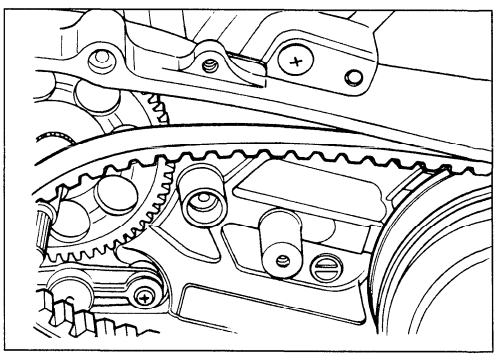


DRIVE BELT

- Insert the drive belt, as low as possible, between the clutch shoe/movable driven face while pulling out the driven face to provide the maximum drive belt clearance.

⚠ CAUTION

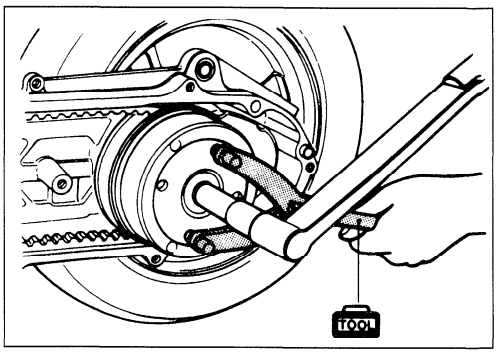
The drive belt contact surface of the driven face should be thoroughly cleaned.



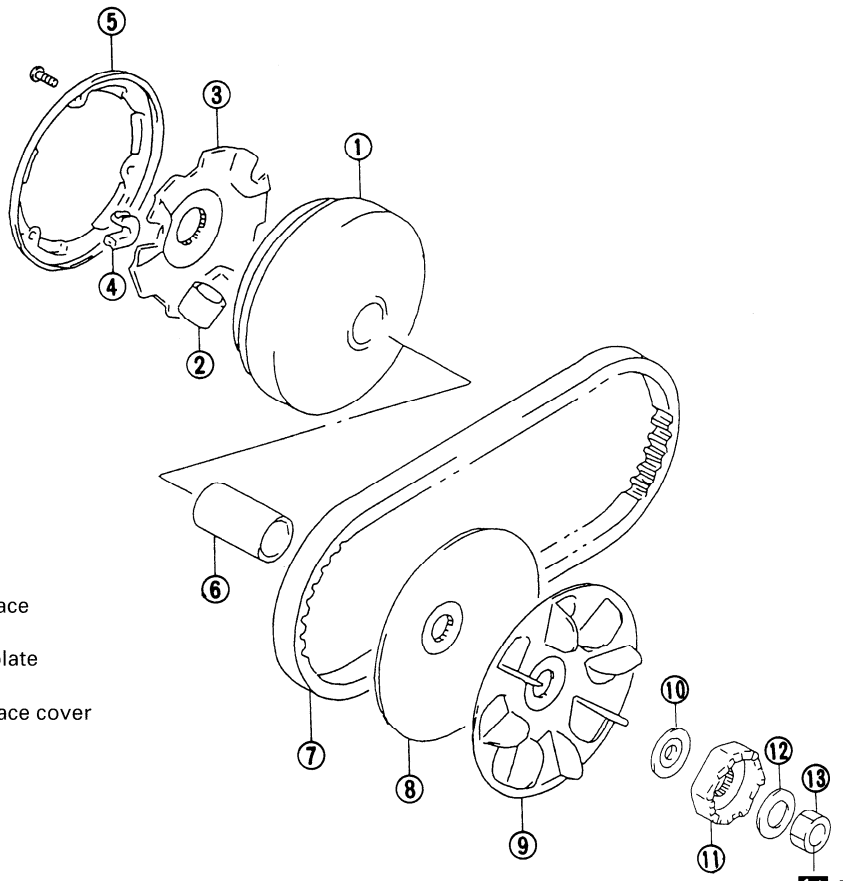
- Thoroughly clean the clutch housing and position it over the clutch shoe assembly.
- Tighten the clutch housing nut to the specified torque with the special tool.

TOOL 09930-40113: Rotor holder

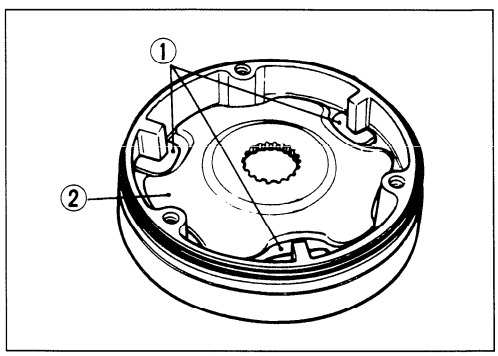
Clutch housing nut: 50 N·m (5,0 kg-m, 36,0 lb-ft)



MOVABLE DRIVE



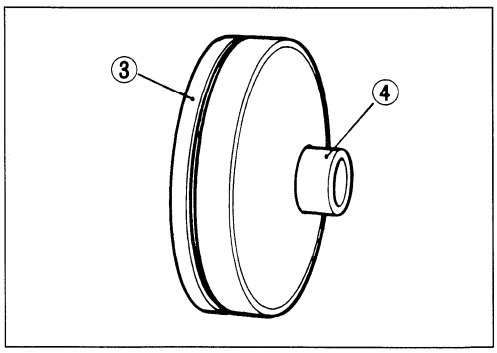
- Mount the three dampers ① on the movable drive plate ② and install it onto the movable drive face.



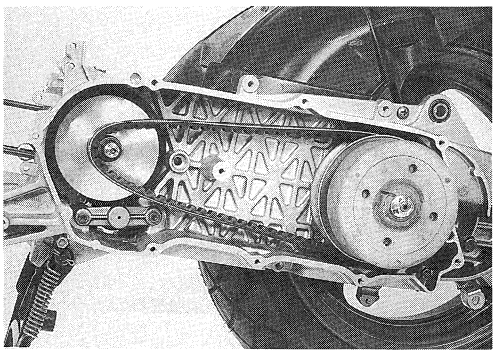
- Install the movable drive face cover ③.

NOTE:
Make sure that the movable drive plate is fully positioned inside the movable drive face or the rollers may fall out.

- Insert the spacer ④.



- Install the movable drive face assembly onto the crankshaft, as shown in the illustration.

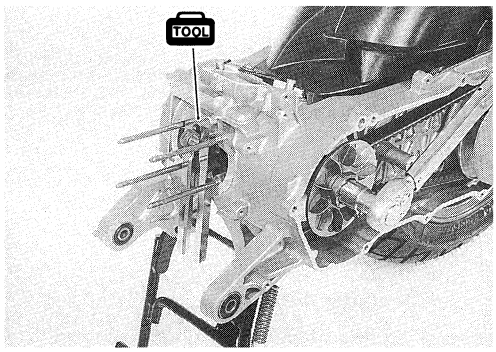


NOTE:
Thoroughly clean the drive belt contact surface.

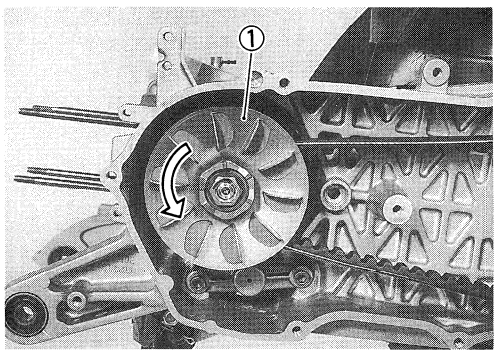
- Tighten the nut to the specified torque with the special tool.

TOOL 09910-20115: Conrod holder

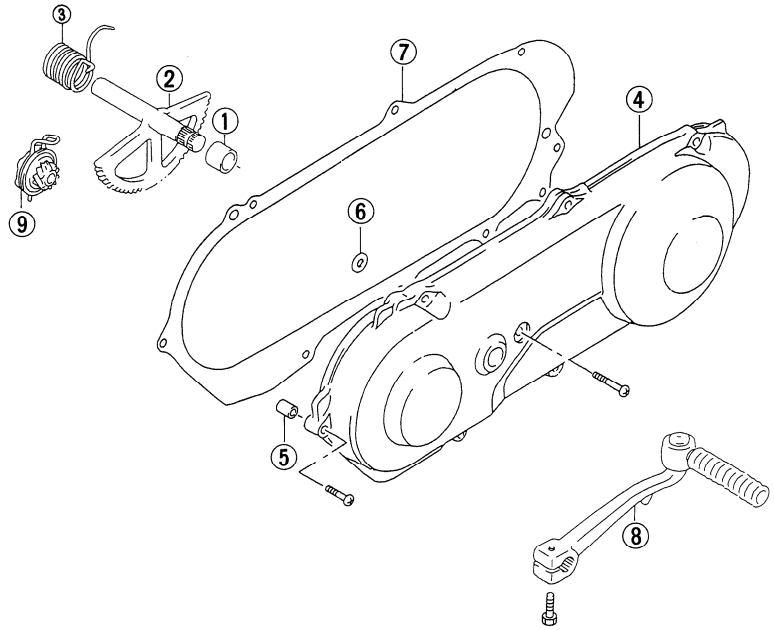
Kick starter nut: 50 N·m (5.0 kg-m, 36.0 lb-ft)



- Turn the fixed drive face ① by hand, until the drive belt is properly seated and both the drive and driven faces rotate together smoothly and without slipping.



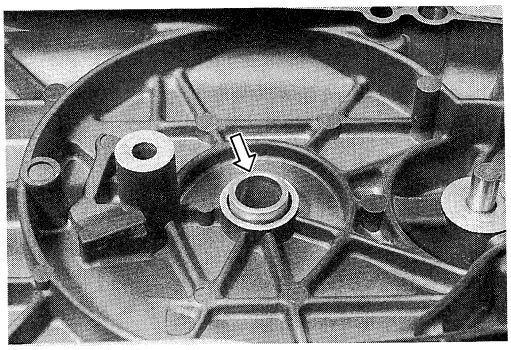
KICK STARTER



① Spacer
② Kick starter shaft
③ Kick starter spring
④ Clutch cover
⑤ Dowel pin
⑥ Gasket
⑦ Gasket
⑧ Kick starter lever
⑨ Kick starter drive gear

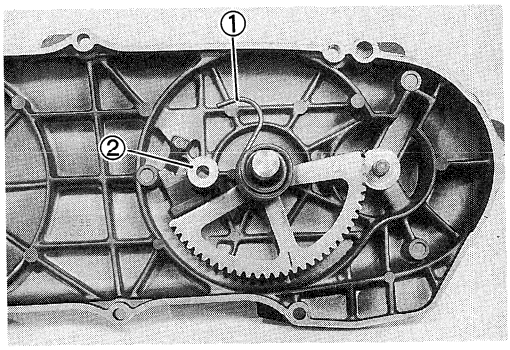
- Apply grease onto the inside of the kick starter shaft spacer.

99000-25010: SUZUKI SUPER GREASE "A"



- Apply a light coat of grease onto the end of the kick starter shaft.
- Install the kick starter spring and hook its end ① onto the clutch cover boss ②.

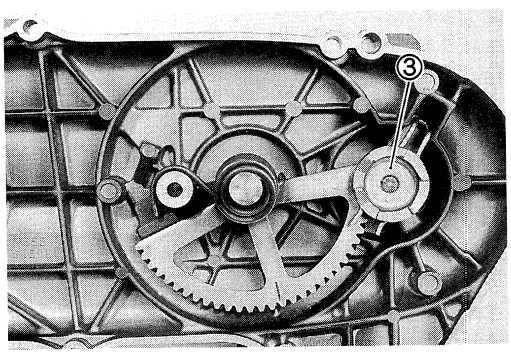
99000-25010: SUZUKI SUPER GREASE "A"



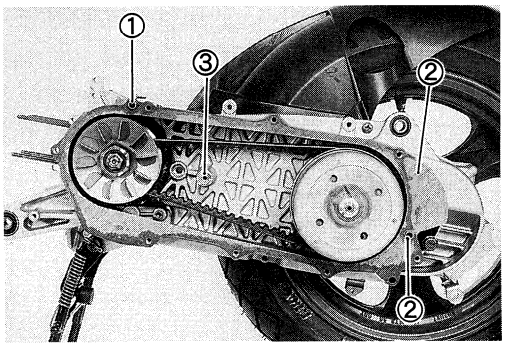
- Apply grease onto the shaft and gear of the kick starter drive gear.

99000-25010: SUZUKI SUPER GREASE "A"

- Install the kick starter drive gear ③.

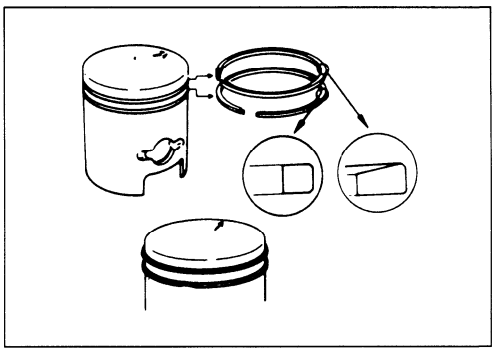


- Install the dowel pins ① and new gaskets (②, ③).



PISTON

- Install the piston rings onto the piston

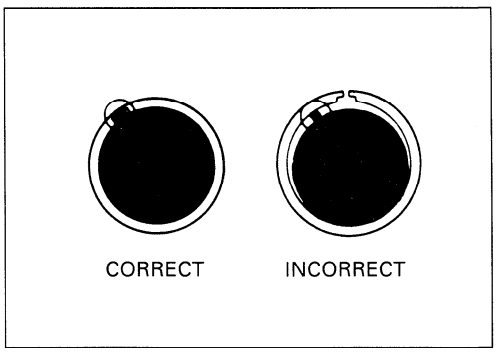


AY50
1st ring : Keystone ring
2nd ring : Rectangular ring and expander ring

AY50W
1st & 2nd : Keystone ring

NOTE:
The piston rings should be installed with the mark facing up.

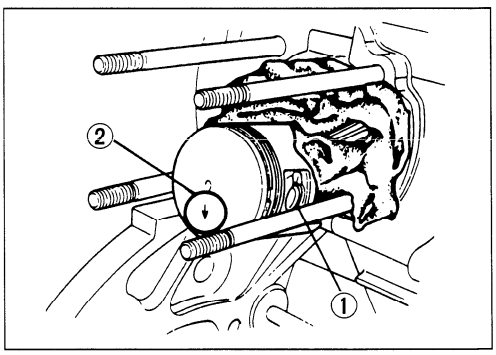
- Position the piston ring gaps, as shown. Before inserting the piston into the cylinder, check that the gaps are properly positioned.



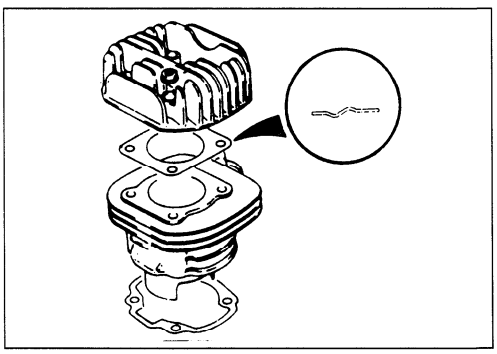
- Securely install the circlip ①.

NOTE:
The arrow mark ② on the piston crown points towards the exhaust side.

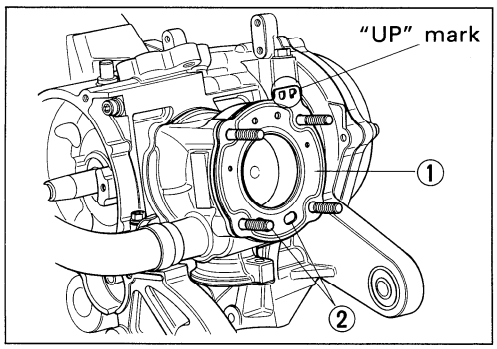
- Apply CCI SUPER oil onto the piston pin and then install the piston.



- Position the cylinder base gasket.
- Apply CCI SUPER oil onto the piston and cylinder wall surfaces and then carefully install the cylinder over the piston.

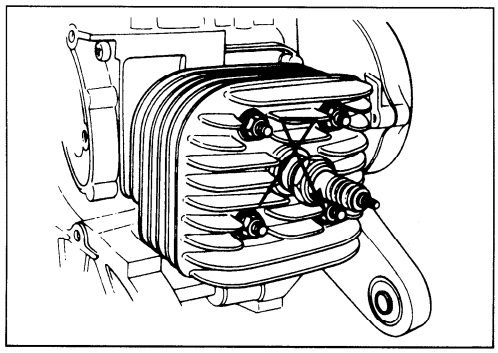


When reassembling the cylinder head gasket ① on the cylinder, face the "UP" mark to the cylinder head cover side and cooling passage big holes ② to the exhaust side as shown in the illustration. ..... For AY50W



- Tighten the cylinder head nuts in a crisscross pattern and to the specified torque.

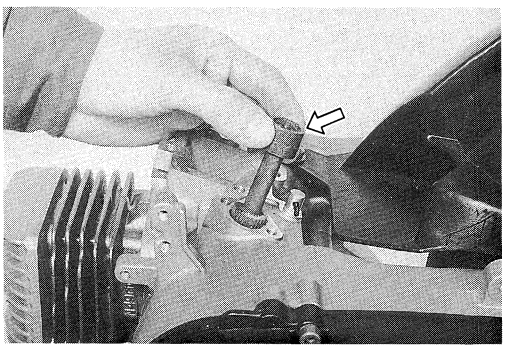
TOOL Cylinder head nut: 10 N·m (1.0 kg-m, 7.0 lb-ft)



OIL PUMP DRIVEN GEAR

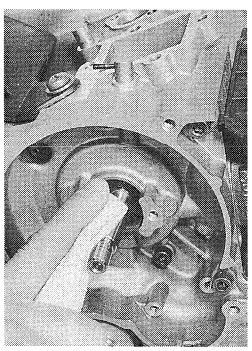
- Apply grease onto the oil pump driven gear and then install it.

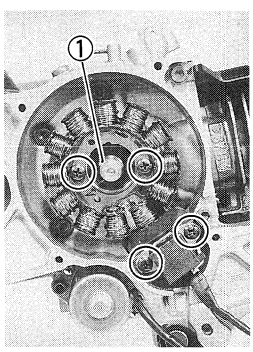
A H 99000-25010: SUZUKI SUPER GREASE "A"



MAGNETO

- Remove any grease from the tapered portion of the crankshaft and also from the magneto rotor.
- Install the key ①, stator coil and pick-up coil.



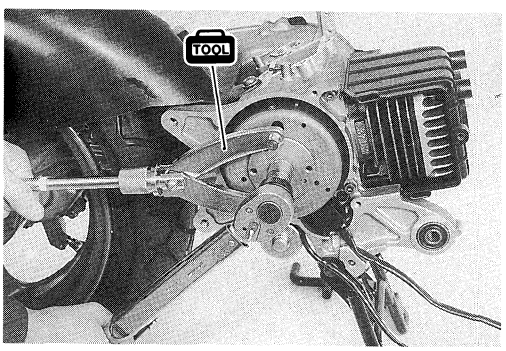


- Apply THREAD LOCK SUPER "1322" to the magneto rotor nut and then tighten it to the specified torque with the special tool.

1322 99000-32110: THREAD LOCK SUPER "1322"

TOOL 09930-40113: Rotor holder

Magneto rotor nut: 40 N·m (4.0 kg-m, 29.0 lb-ft)

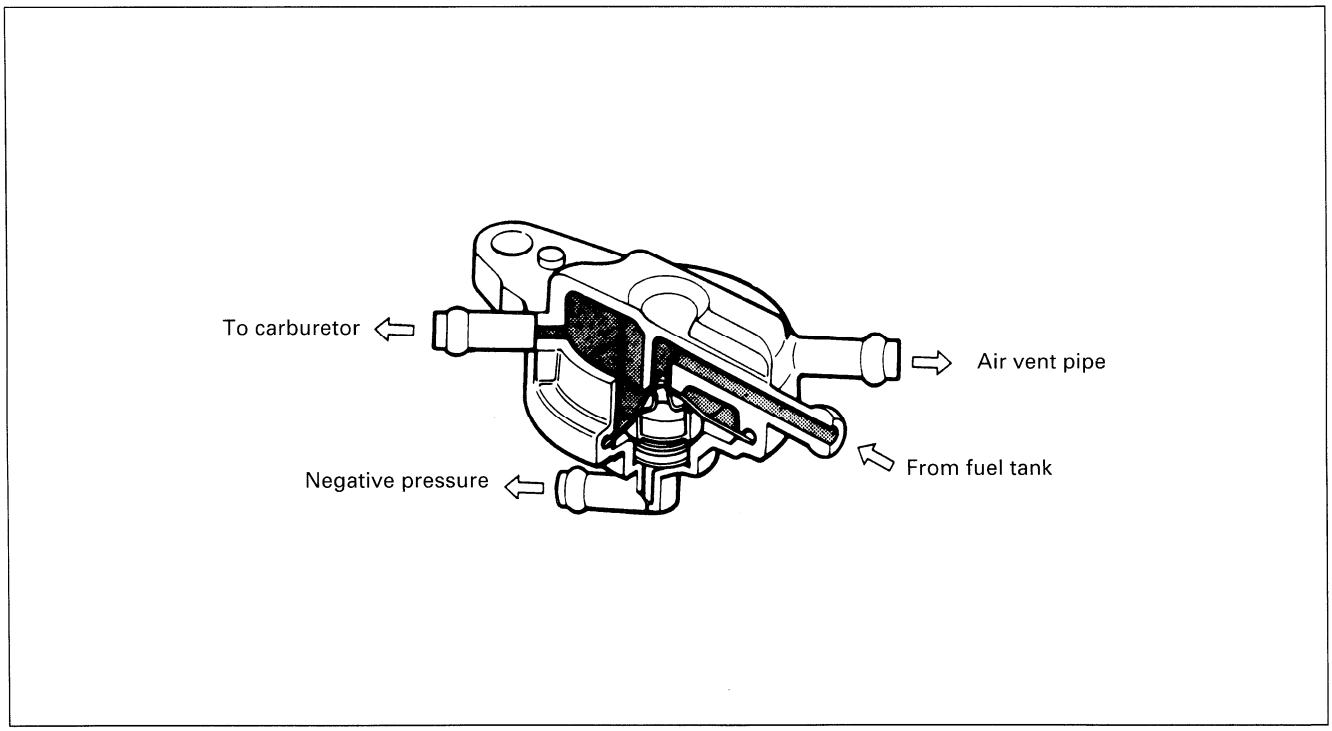


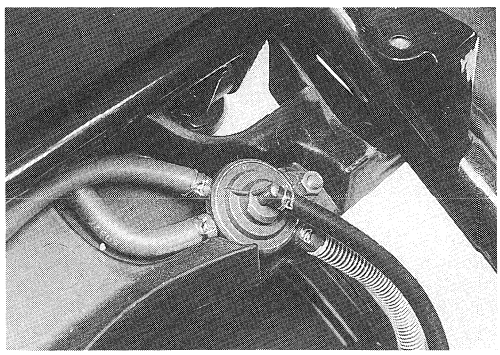
FUEL AND LUBRICATION SYSTEM

CONTENTS

FUEL VALVE

When the engine has started, negative pressure (vacuum) is generated at the intake port. The negative pressure causes the fuel valve diaphragm to compress its spring, opening the fuel passageway and allowing the fuel to flow to the carburetor.
When the engine has stopped, the spring pushes against the valve, closing the fuel passageway, and stopping the flow of fuel to the carburetor.





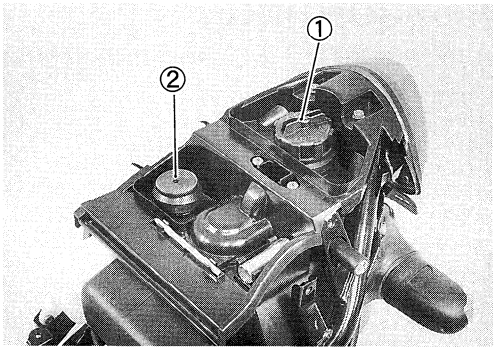
FUEL TANK AND OIL TANK

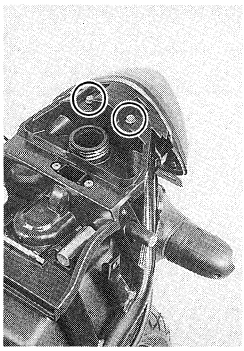
REMOVAL

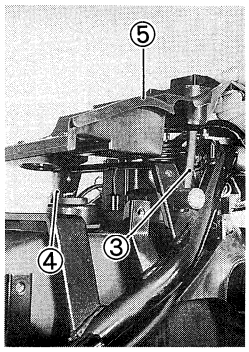
⚠ WARNING

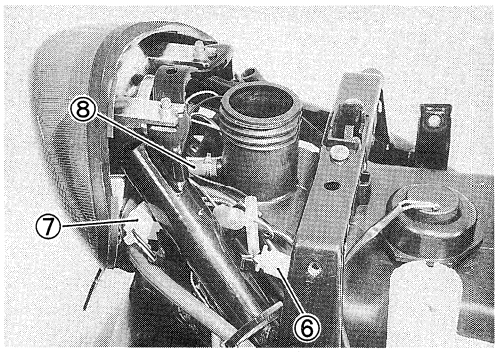
Gasoline is very explosive.
Extreme care must be taken.

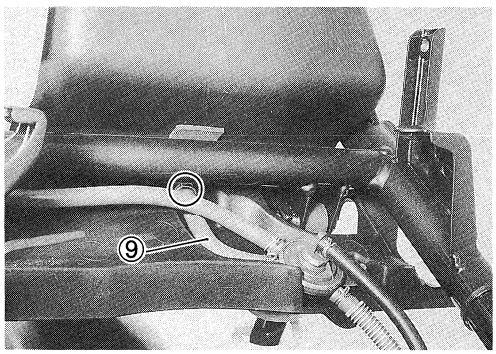
- Remove the frame covers. (Refer to page 6-3).
- Remove the fuel tank cap ① and oil tank cap ②.
- Disconnect the fuel drain hose ③ and oil drain hose ④.
- Remove the fuel and oil tank cover ⑤.
- Disconnect the fuel level gauge lead wire ⑥ and oil level gauge lead wire ⑦.
- Disconnect the fuel tank breather hose ⑧ and fuel hose ⑨.
- Remove the rear fender mounting screws ⑩.
- Remove the fuel tank ⑪.
- Disconnect the oil hose ⑫.
- Remove the oil tank ⑬.

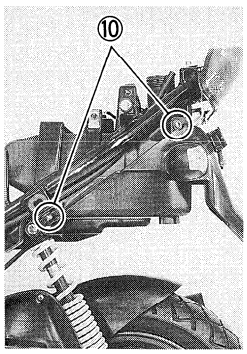


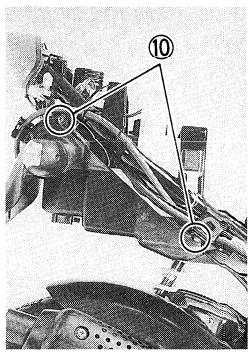


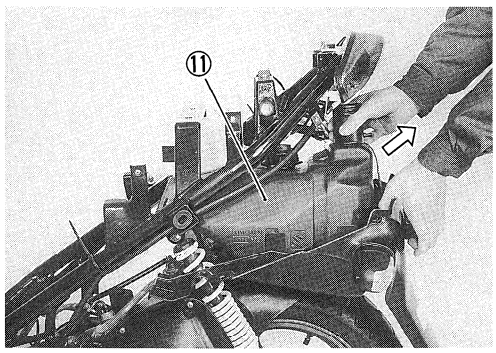


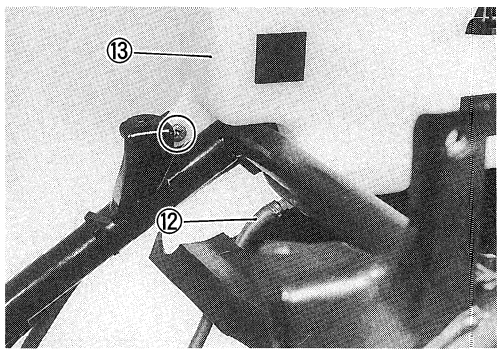








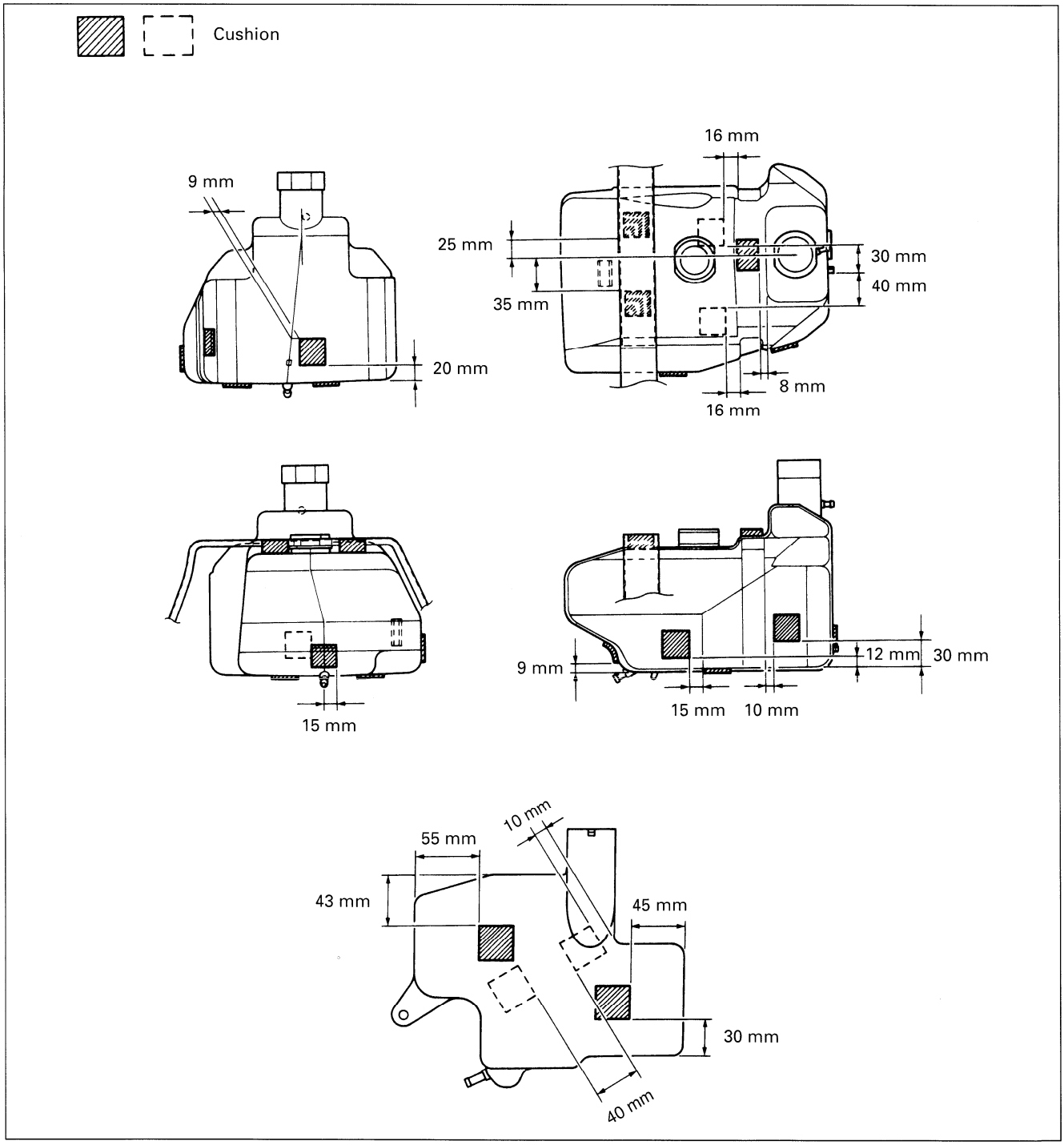




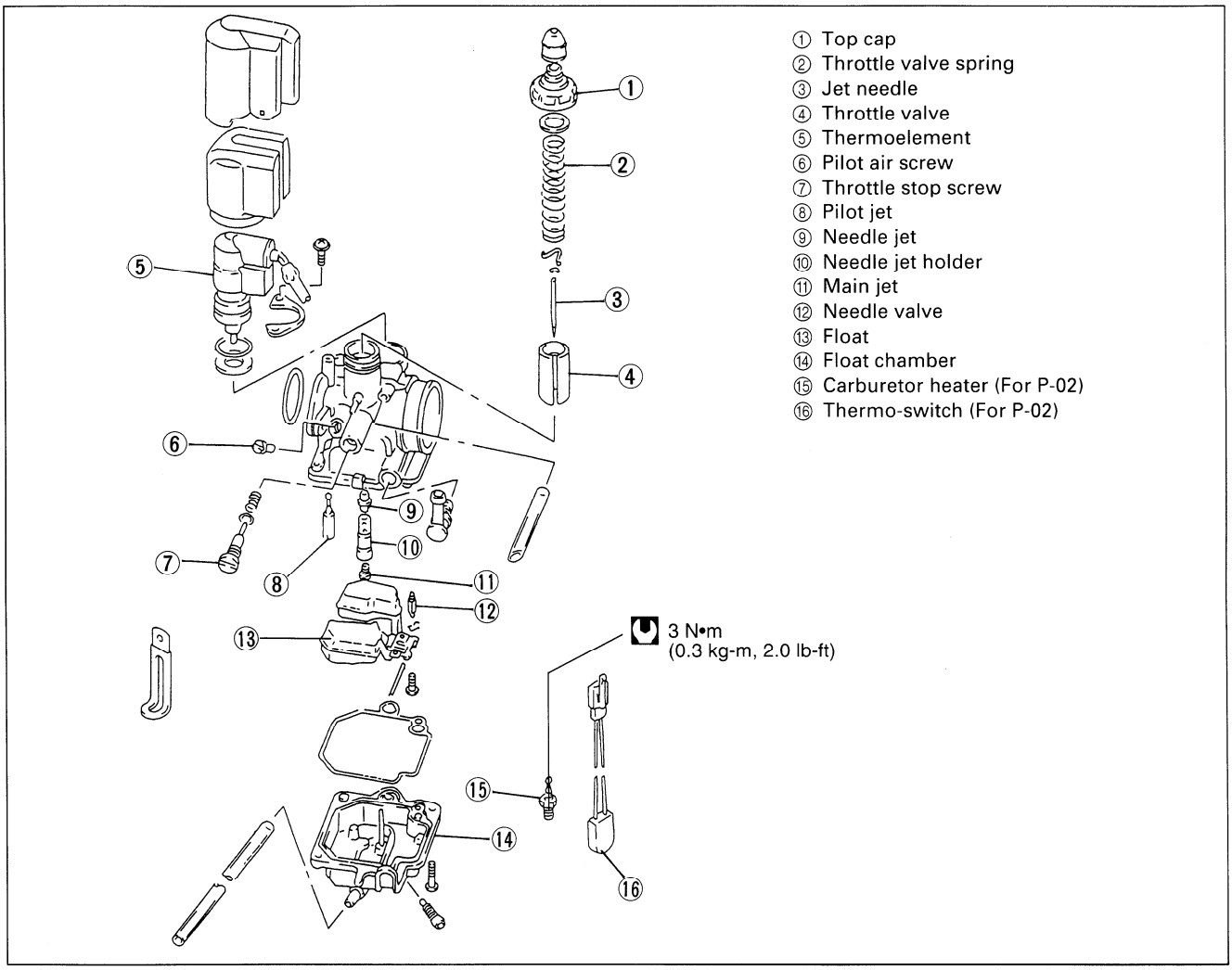
REMOUNTING

- Remount the fuel tank and oil tank in the reverse order of removal.

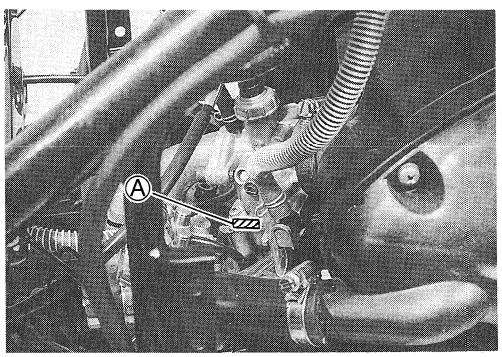
FUEL TANK AND OIL TANK CUSHIONS



CARBURETOR



CARBURETOR I.D. No. Ⓐ

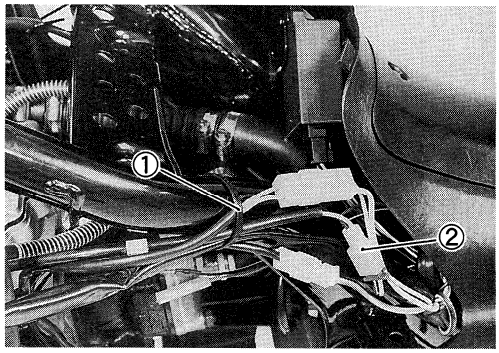


CARBURETOR SETTING

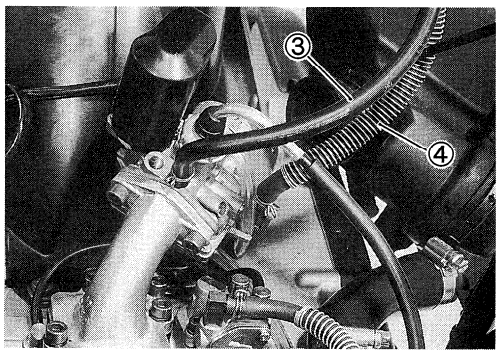
Refer to pages 8-26 and 27.

REMOVAL

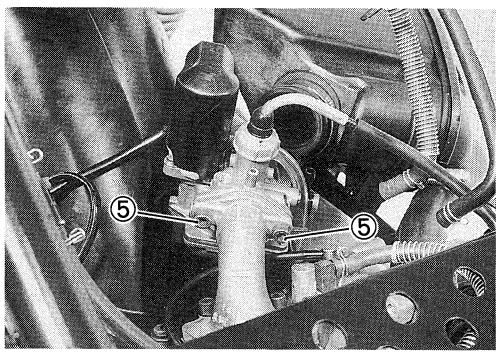
- Remove the side leg shields. (Refer to page 6-3.)
- Remove the air cleaner.
- Remove the clamp ①.
- Disconnect the thermoelement lead wire ②.



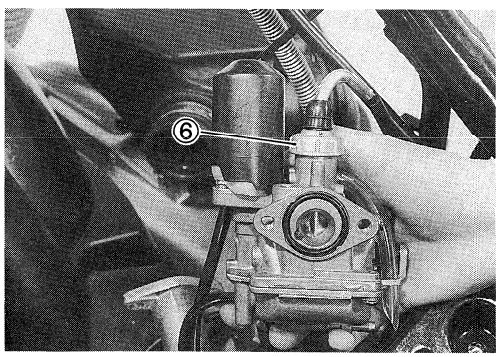
- Disconnect the vacuum hose ③ and fuel hose ④.



- Remove the carburetor mounting bolts ⑤.

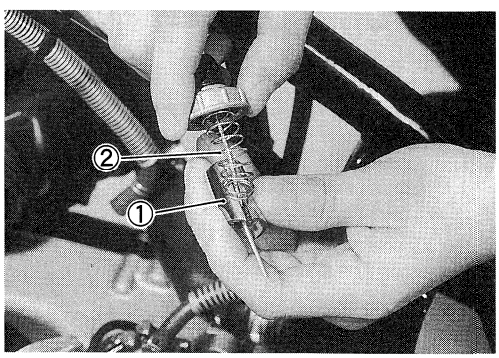


- Remove the top cap ⑥ with the throttle valve.

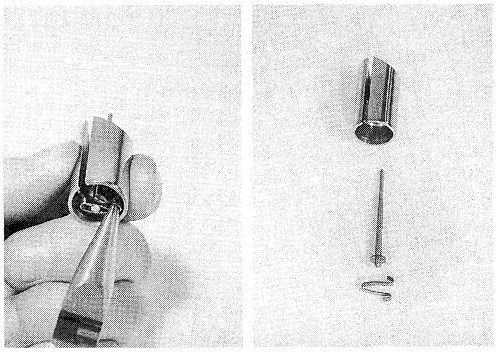


DISASSEMBLY

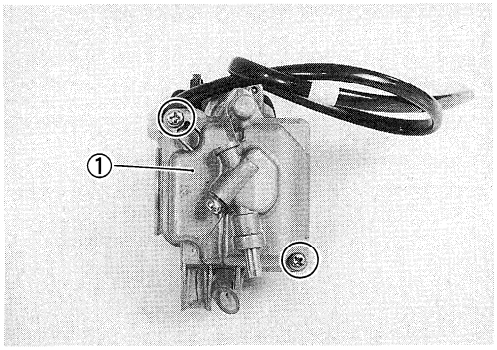
- Remove the throttle cable from the slit in the throttle valve and then remove the throttle valve ①, jet needle and throttle valve spring ②.



- Separate the jet needle and throttle valve.



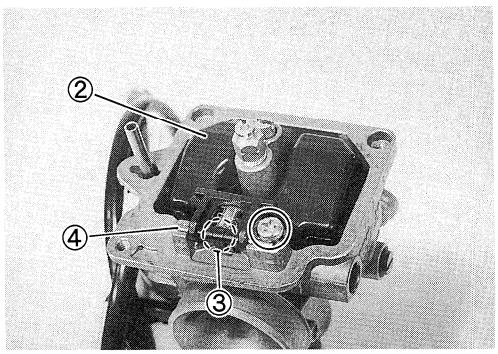
- Remove the float chamber ①.



- Remove the float ② and needle valve ③ by removing the float pin ④.

⚠ CAUTION

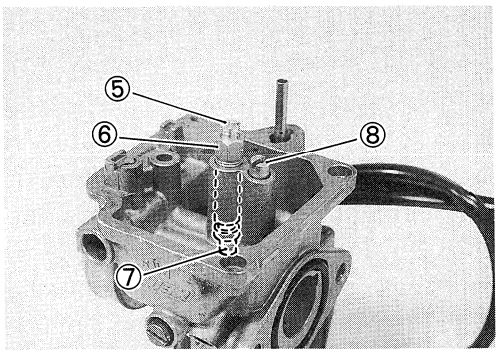
When removing the float pin, be careful not to damage the carburetor body and float.

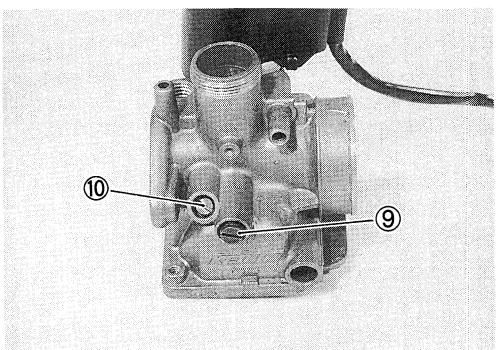


- Remove the main jet ⑤, needle jet holder ⑥, needle jet ⑦ and pilot jet ⑧.
- Remove the throttle stop screw ⑨ and pilot air screw ⑩.

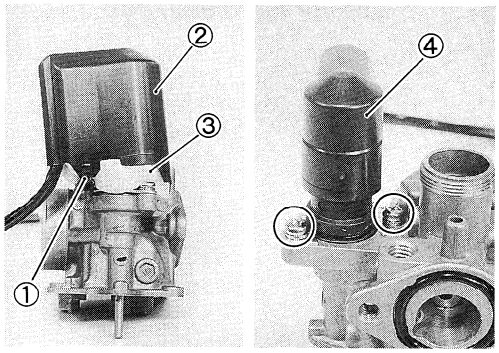
⚠ CAUTION

Do not use a wire to clean the passages and jets. Only use compressed air.



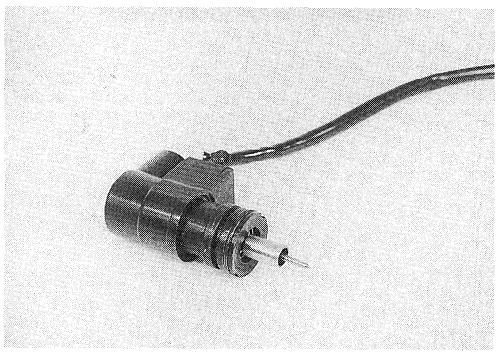


- Remove the clamp ①, thermoelement cover ② and foam liner ③.
- Remove the thermoelement ④.



⚠ CAUTION

Do not disassemble the thermoelement. It is not serviceable.



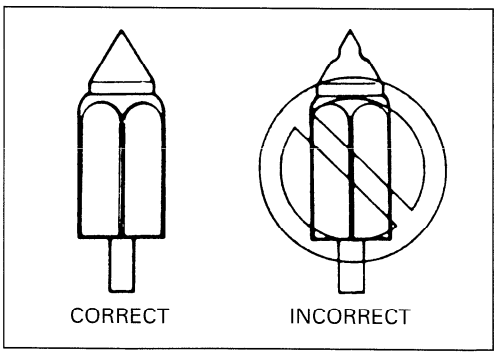
INSPECTION

Check the following items for any damage or clogging.

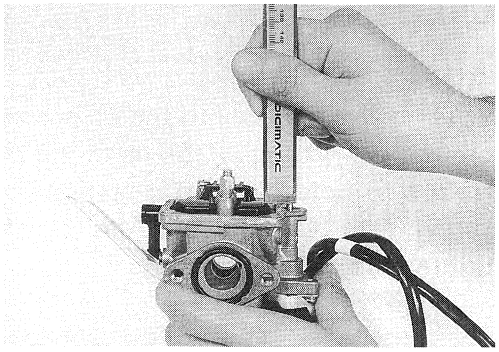
* Main jet
* Pilot jet
* Needle jet
* Thermoelement (Refer to page 7-16.)
* Throttle valve
* Float
* Needle valve

NEEDLE VALVE INSPECTION

If foreign matter is caught between the valve seat and the needle valve, the gasoline will continue flowing and overflow. If the valve seat and needle valve are worn beyond the permissible limits, similar trouble will occur. Conversely, if the needle valve sticks, the gasoline will not flow into the float chamber. Clean the float chamber and float parts with gasoline. If the needle valve is worn, as shown in the illustration, replace it with a new valve seat. Clean the fuel passage of the mixing chamber with compressed air.



FLOAT HEIGHT ADJUSTMENT

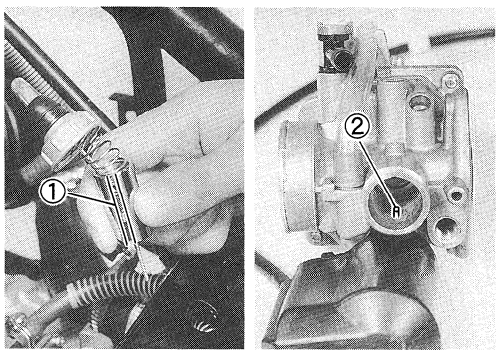


To check the float height, turn the carburetor upside down. Gradually lower the float and observe the clearance between the float tongue and the end of the needle valve. When the tongue just begins to contact the end of the needle valve, stop lowering the float and hold it. Then, measure the float height from the float chamber mating surface.
Use vernier calipers to measure the float height.
Bend the tongue as necessary to bring height Ⓐ to the proper specification.

NOTE:
When measuring the float height, remove the O-ring.

TOOL 09900-20101: Vernier calipers
Float height Ⓐ: 5.1 ± 0.5 mm (0.20 ± 0.02 in)

REASSEMBLY AND REMOUNTING

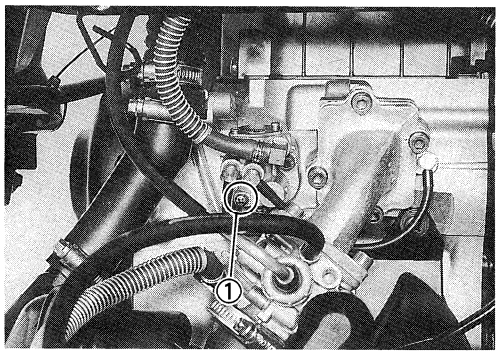


Reassemble and remount the carburetor in the reverse order of removal and disassembly. Pay attention to the following points:

- Adjust the pilot air screw. (Refer to page 8-24.)
- Install the throttle valve with the top cap.
- Align the slit ① on the throttle valve with the projection ② on the carburetor body.

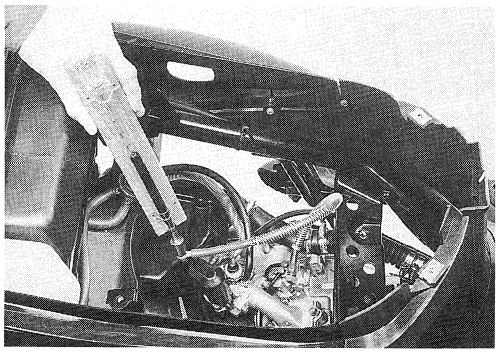
- After remounting the carburetor, the following adjustments are necessary.
  * Throttle cable play.....Refer to page 2-6.
  * Engine idle speed.....Refer to page 2-6.

OIL PUMP



AIR BLEEDING

Whenever air leaks into the oil pipe from the oil tank or the oil pump is removed, the oil pump must be bled of any air. Hold the motorcycle in a stationary position. Loosen the screw ① to bleed the air. After all of the air has been bled, tighten the screw.



CHECKING OIL PUMP

Use the CCI oil gauge to check the oil pump discharge rate. Measure the amount of oil that the oil pump draws during the procedure.

- Remove the trunk.
- Fill the CCI oil gauge with SUZUKI CCI SUPER OIL. Connect the oil gauge to the suction side of the oil pump.
- Run the engine at 3 000 r/min.
- Keep the engine speed at 3 000 r/min. Allow the pump to draw for 5 minutes. The measurement on the oil gauge should be within specification.

TOOL 09900-21602: CCI oil gauge

Oil discharge amount:

AY50: 0.9 - 1.1 ml at 3 000 r/min for 5 minutes.

AY50W: 0.8 - 1.0 ml at 3 000 r/min for 5 minutes.

⚠ CAUTION

During this check, observe the following points.

* **The motorcycle should be placed on its center stand.**
* **Do not touch the rear wheel while the engine is running.**

NOTE:

Adjust the engine idle speed after checking the oil pump. (Refer to page 2-6.)

COOLING SYSTEM (AY50W)

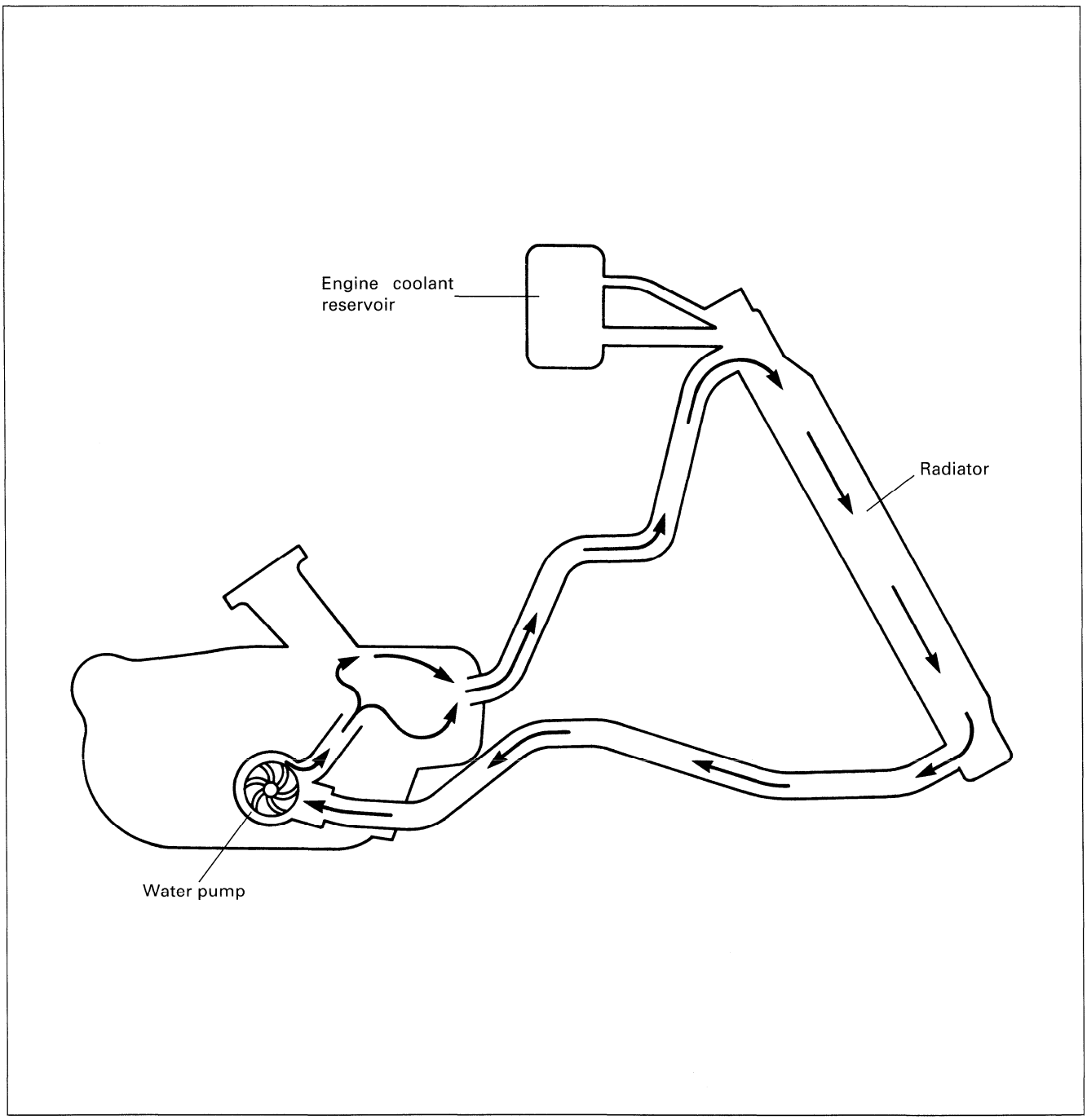
CONTENTS

COOLING SYSTEM

DESCRIPTION

The engine in this motorcycle is liquid cooled with passages in the cylinder, cylinder head and radiator to allow the engine coolant to continually circulate during operation. The cooling system consists of a lightweight-aluminum radiator, a high-capacity, centrifugal water pump, a temperature switch and an engine coolant reservoir.

Refer to the following illustration for the cooling system routes.



ENGINE COOLANT

At the time of manufacture, the cooling system is filled with a 50 : 50 mixture of distilled water and ethylene glycol anti-freeze. This 50 : 50 mixture will provide the optimum corrosion protection and excellent heat protection, and will protect the cooling system from freezing at temperatures above –31°C (–24°F).

If the motorcycle is to be exposed to temperatures below –31°C (–24°F), the percentage of anti-freeze should be increased to 55% or 60%, according to figure 2.

- The characteristics of different anti-freeze vary. Therefore, read the label to carefully.

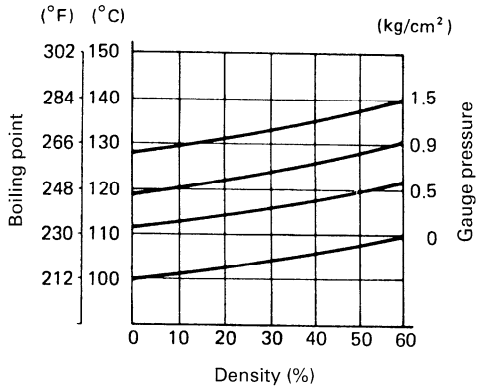


Fig. 1 Engine coolant density-bolling point curve

⚠ CAUTION

- **Use a high quality ethylene glycol based anti-freeze, mixed with distilled water. Do not mix an alcohol based anti-freeze or different brands of anti-freeze.**
- **Do not put in more than 60% or less than 50% of anti-freeze.**

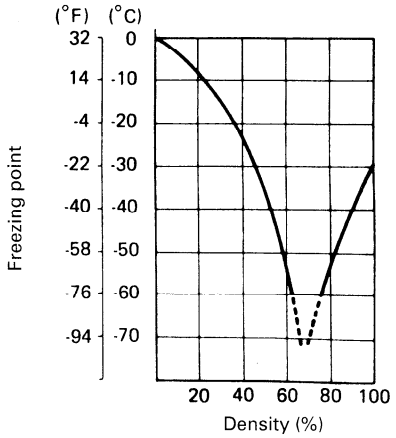
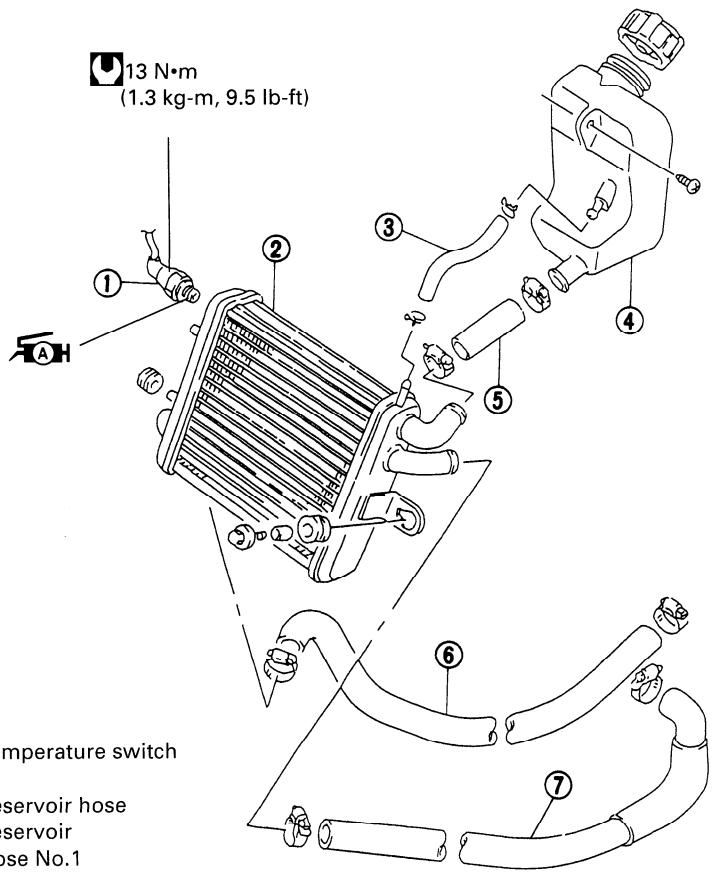


Fig. 2 Engine coolant density-freezing point curve

⚠ WARNING

- *** You can be injured by scalding fluid or steam if you open the engine coolant reservoir cap when the engine is hot. Wait until the engine has cooled, before removing the engine coolant reservoir cap.**
- *** The engine must be cool before servicing the cooling system.**
- *** If engine coolant contacts the skin, wash thoroughly with water.**
- *** If engine coolant gets into the eyes, flush them with water and immediately call a physician.**
- *** If engine coolant is swallowed, induce vomiting and call a physician immediately.**
- *** Keep engine coolant away from children.**

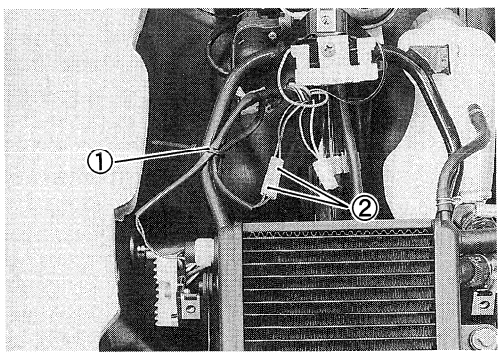
RADIATOR AND ENGINE COOLANT RESERVOIR



① Engine coolant temperature switch
② Radiator
③ Engine coolant reservoir hose
④ Engine coolant reservoir
⑤ Upper radiator hose No.1
⑥ Upper radiator hose No.2
⑦ Lower radiator hose

RADIATOR REMOVAL

- Remove the front leg shield. (Refer to page 6-2.)
- Drain the engine coolant. (Refer to page 2-7.)
- Remove the clamp ①.
- Disconnect the temperature switch lead wires ②.
- Remove the engine coolant temperature switch.

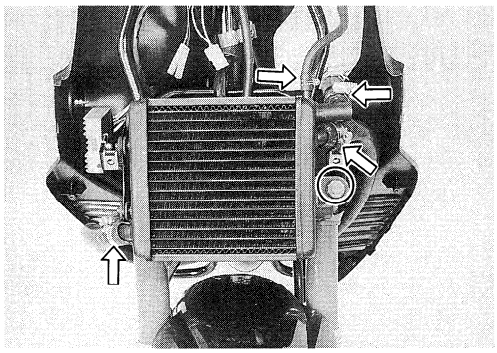


⚠ WARNING

*** Do not open the engine coolant reservoir cap when the engine is hot, as you may be injured by escaping hot liquid or vapor.**

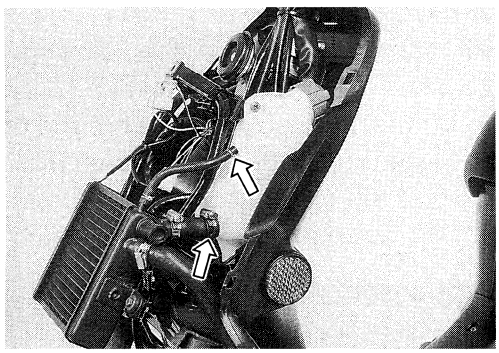
*** Engine coolant may be harmful if swallowed or if it comes in contact with the skin or eyes. If engine coolant gets into the eyes or contacts the skin, flush the eyes or wash the skin thoroughly, with plenty of water. If engine coolant is swallowed, induce vomiting and call a physician immediately.**

- Disconnect the radiator hoses and engine coolant reservoir hose.
- Remove the radiator.



ENGINE COOLANT RESERVOIR REMOVAL

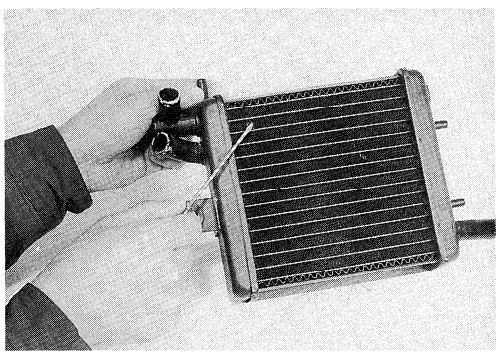
- Remove the front leg shield. (Refer to page 6-2.)
- Disconnect upper radiator hose No.1 and the engine coolant reservoir hose.
- Remove the engine coolant reservoir.



RADIATOR INSPECTION

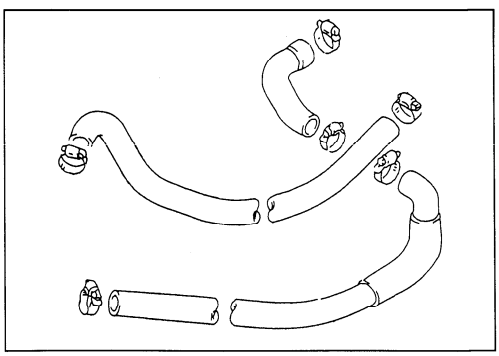
Before draining the engine coolant and removing the radiator, perform the following:

Remove any foreign objects from the radiator fins with compressed air. Straighten any bent or dented radiator fins with a thin-blade screwdriver.



RADIATOR HOSES INSPECTION

Inspect each hose for cracks, damage, flat spots and any irregularities. Check all hose connections. If any leaks are detected, tighten the connections or replace the faulty hose.



INSTALLATION

The radiator is to be installed in the reverse order of removal. After installing the radiator, be sure to add engine coolant. (Refer to page 2-7.)

ENGINE COOLANT TEMPERATURE SWITCH

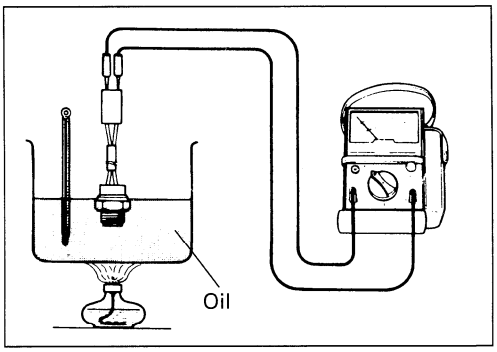
REMOVAL

- Remove the engine coolant temperature switch ①. (Refer to page 5-3.)

INSPECTION

The temperature switch's closing temperature must be checked.

- Connect the pocket tester to the temperature switch.
- Place the temperature switch into a container of oil.
- Heat the oil and check the temperature on the thermometer when the temperature switch closes.



09900-25002 : Pocket tester

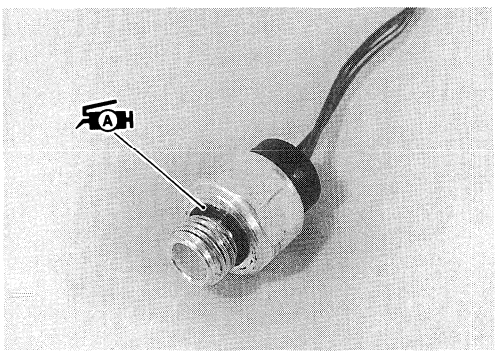
Temperature switch specification

OFF → ON	Approx. 117 °C (243 °F)
ON → OFF	Approx. 110 °C (230 °F)

INSTALLATION

- Apply grease to the O-ring.

99000-25010: SUZUKI SUPER GREASE "A"



- Tighten the temperature switch to the specified torque.

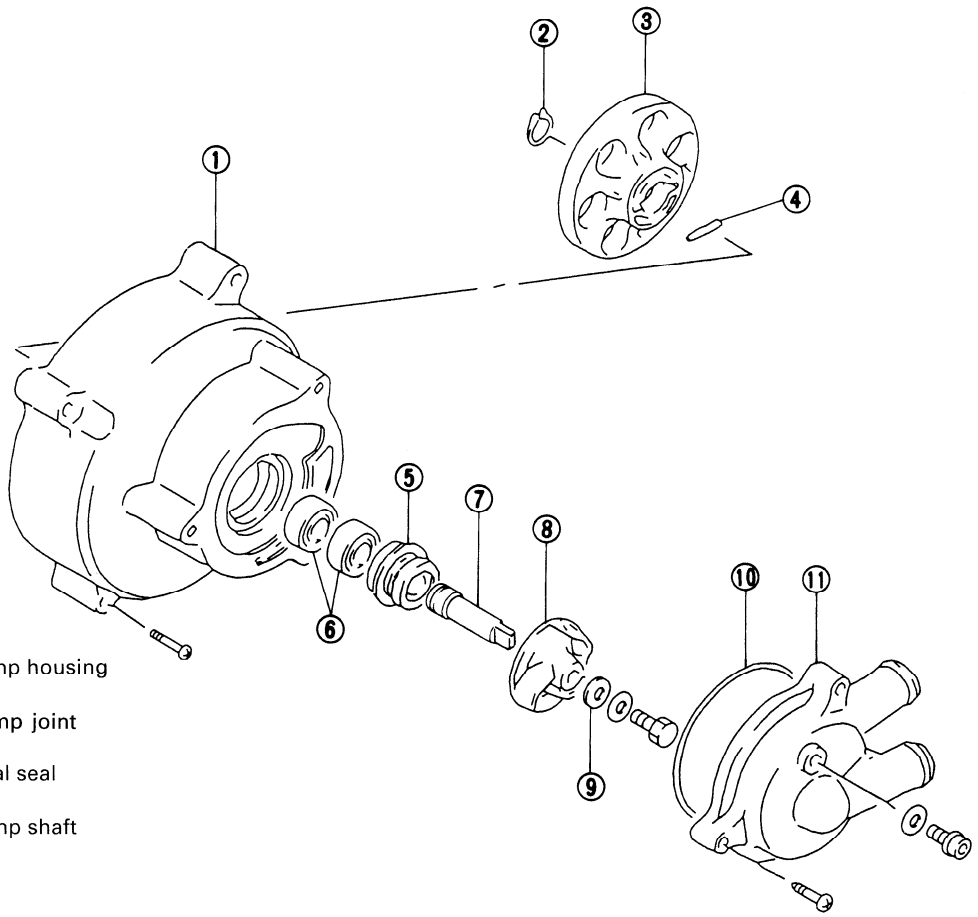
Temperature switch: 13 N·m (1.3 kg-m, 9.5 lb-ft)

⚠ CAUTION

Take special care when handling the temperature switch. Do not subject it to strong blows or allow it to be dropped.
Replace the O-ring with a new one.

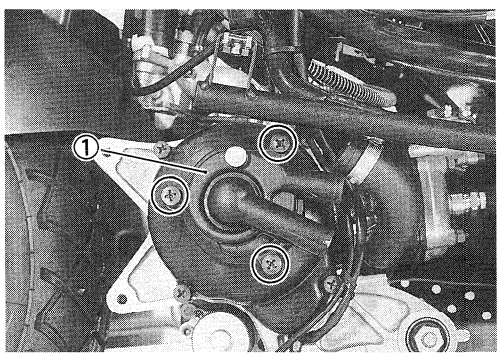
- After installing the radiator, be sure to add engine coolant. (Refer to page 2-7.)

WATER PUMP

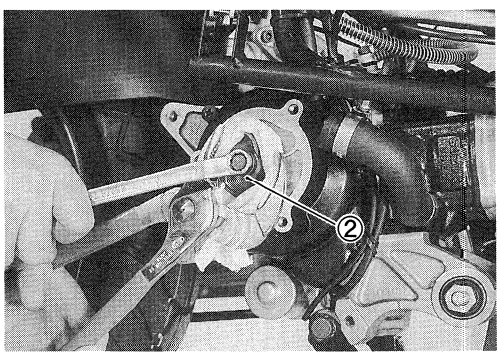


REMOVAL AND DISASSEMBLY

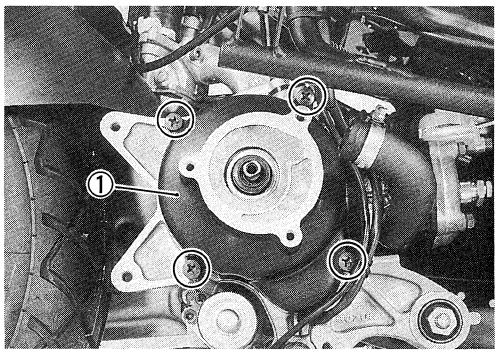
- Remove the frame covers and side leg shields. (Refer to page 6-3.)
- Drain the engine coolant. (Refer to page 2-7.)
- Remove the muffler. (Refer to page 3-5.)
- Disconnect the radiator hose.
- Remove the water pump cover ①.



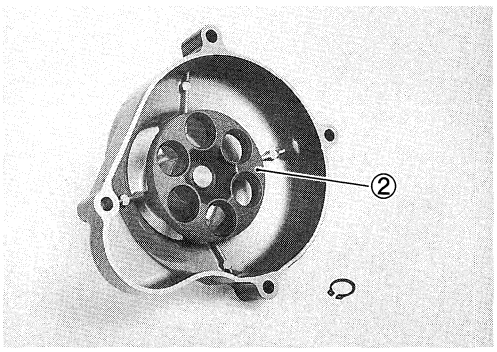
- Hold the impeller ② with water pump pliers and remove the impeller mounting bolt.
- Remove the impeller.



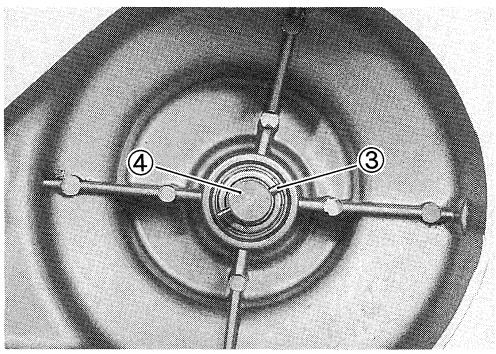
- Remove the water pump housing ①.



- Remove the circlip and water pump driven gear ②.



- Remove the pin ③ and water pump shaft ④.

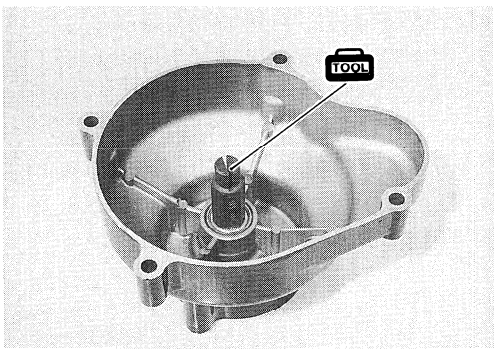


Drive out the inner and outer water pump bearings with the special tool, as follows.

NOTE:
If the bearing makes no abnormal noises or shows no signs of wear or damage, there is no need to remove it.

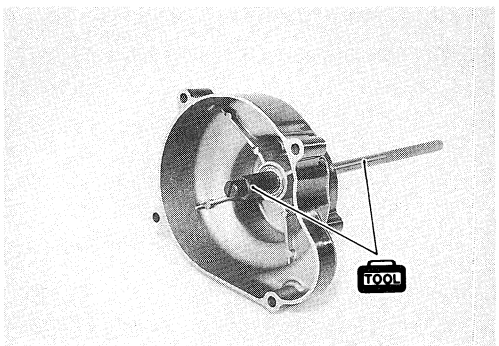
TOOL 09941-50111: Bearing remover

- Insert the bearing remover attachment into the water pump bearing.
- Install the wedge from the opposite side and lock it into the slit of the bearing remover attachment.
- Drive out the water pump bearing by knocking the wedge bar.

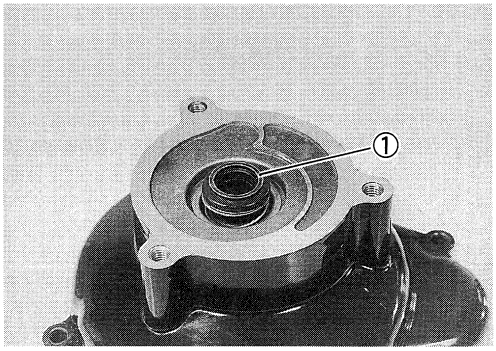


⚠ CAUTION

The removed bearing should be replaced with a new one.



- Remove the mechanical seal ①.

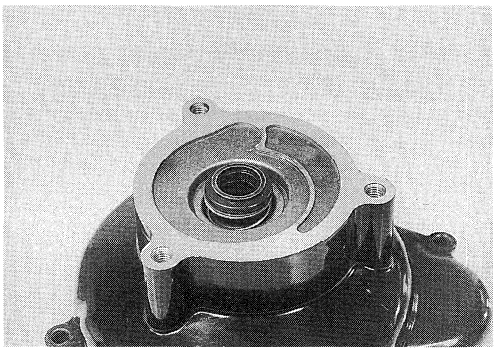


⚠ CAUTION

The removed mechanical seal should be replaced with a new one.

INSPECTION

Visually inspect the mechanical seal for damage.
Replace the mechanical seal if there are any signs of leaks or damage.

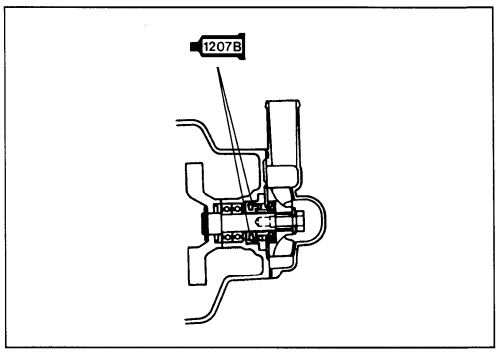


REASSEMBLY

Reassemble and remount the water pump in the reverse order of removal and disassembly.

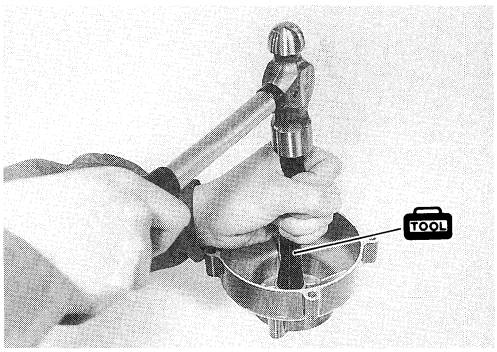
- Apply SUZUKI BOND NO. 1207B, to matching surface of mechanical seal.

1207B 99000-31140 : SUZUKI Bond No. 1207B

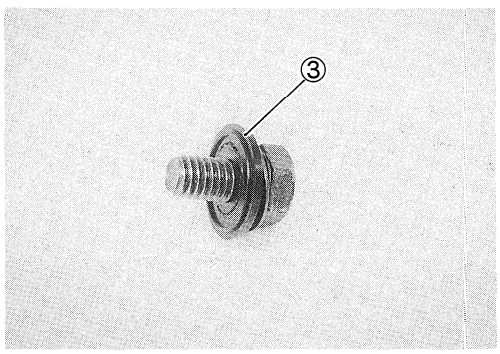


- Install the water pump bearing with the special tool.

TOOL 09943-88211 : Bearing installer

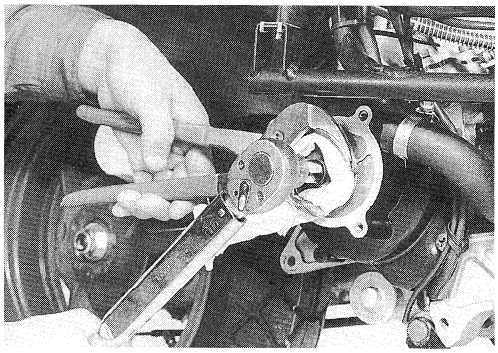


- Use a new gasket ③ with the impeller mounting bolt. When installing the gasket, face the metal side of the gasket towards the spring washer and bolt.

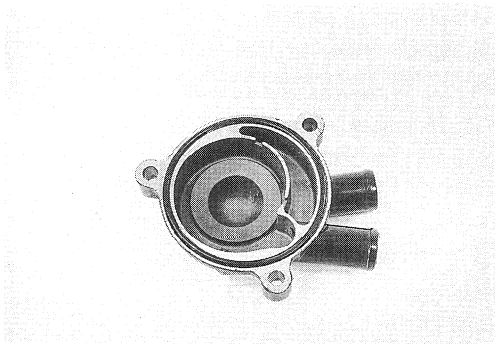


- While holding the impeller with water pump pliers, tighten the impeller mounting bolt to the specified torque.

Impeller mounting bolt : 8 N·m (0.8 kg-m, 6.0 lb-ft)



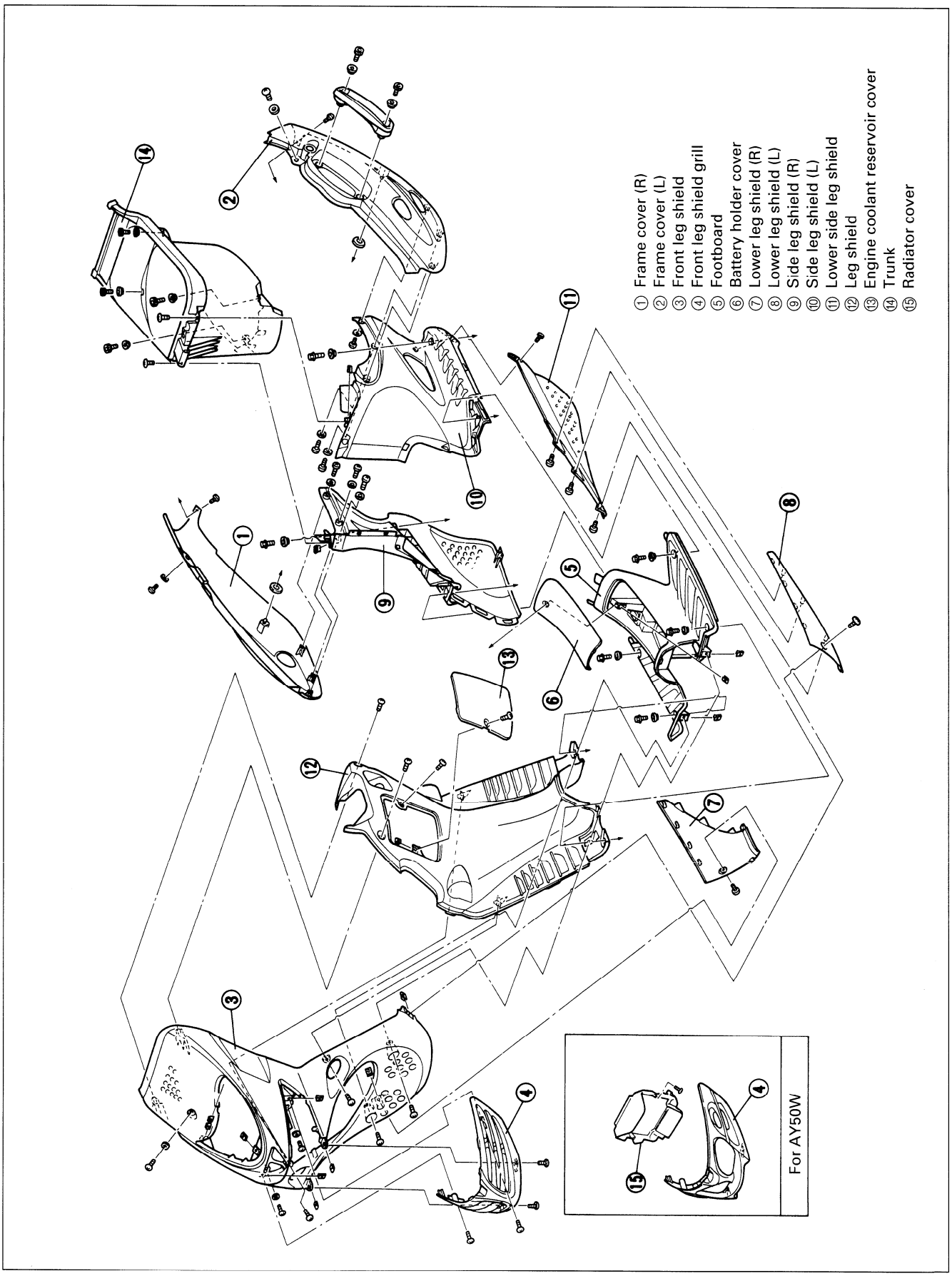
- Install a new O-ring and tighten the water pump cover.
- After installing the water pump, be sure to add engine coolant. (Refer to page 2-7.)



CHASSIS

CONTENTS

LEG SHIELDS AND FRAME COVERS



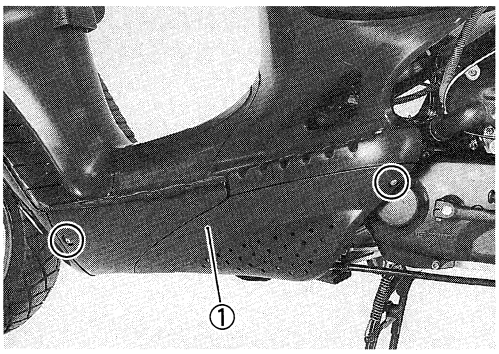
LEG SHIELD REMOVAL

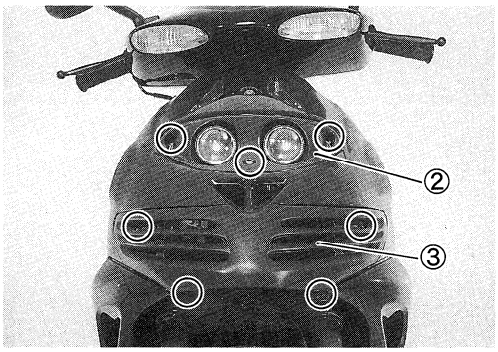
- Remove the lower leg shields and lower side leg shield ①.
- Remove the headlight cover ②.
- Remove the front leg shield grill ③.
- Remove the radiator cover ④.... For AY50W
- Remove the front leg shield ⑤.
- Remove the engine coolant reservoir cover ⑥.
- Remove the leg shield ⑦.
- Remove the battery holder cover ⑧.
- Remove the battery ⑨.

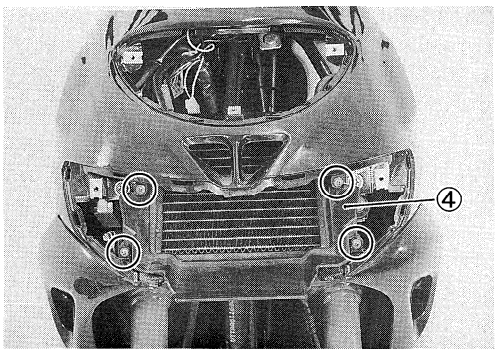
⚠ CAUTION

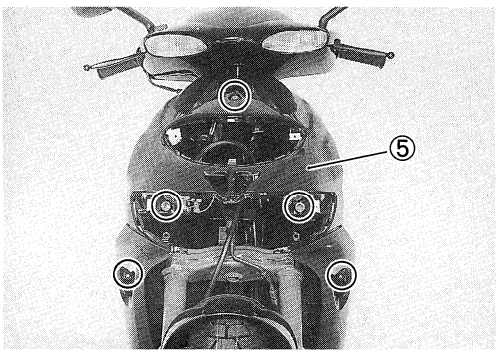
First, disconnect the battery ⊖ lead wire and then disconnect the battery ⊕ lead wire.

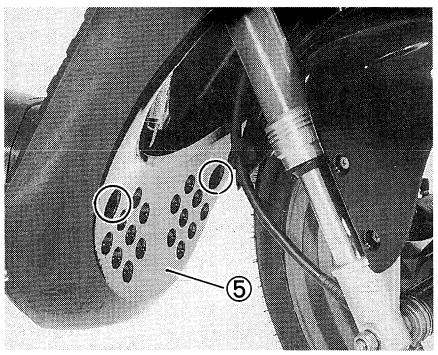
- Remove the footboard ⑩.

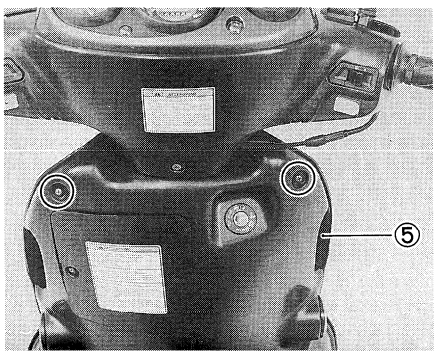


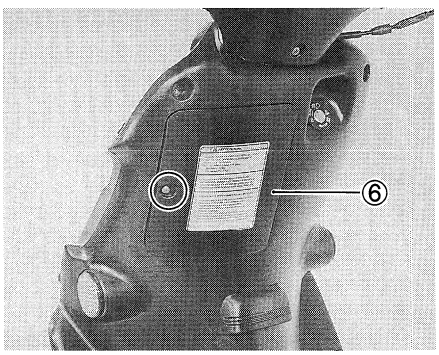


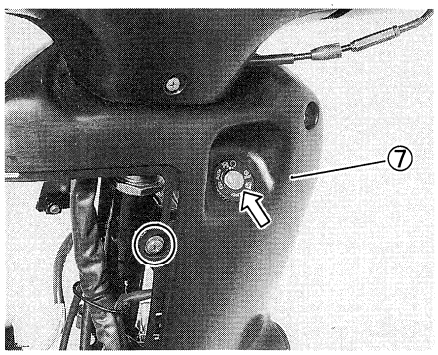


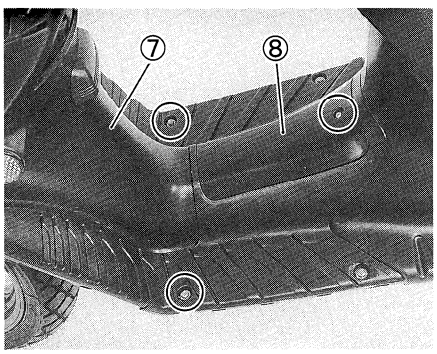


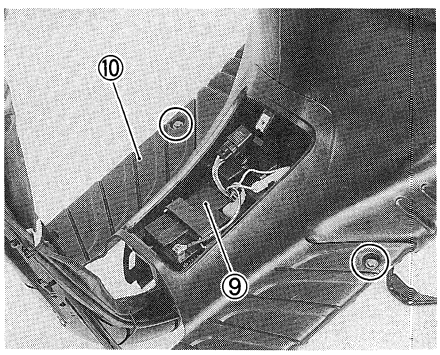






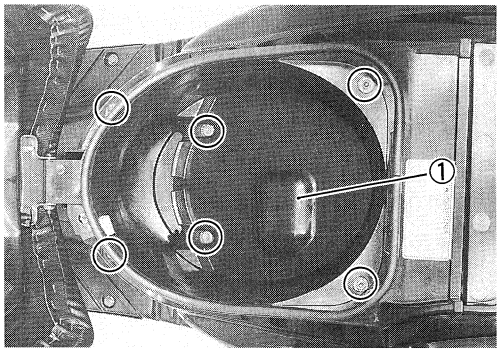


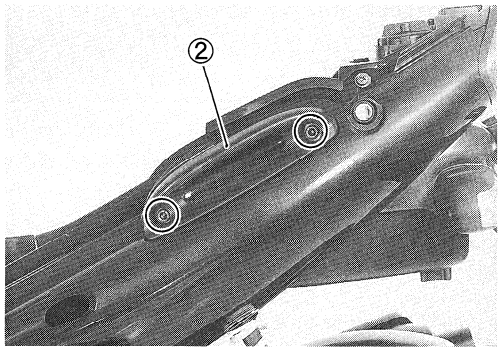


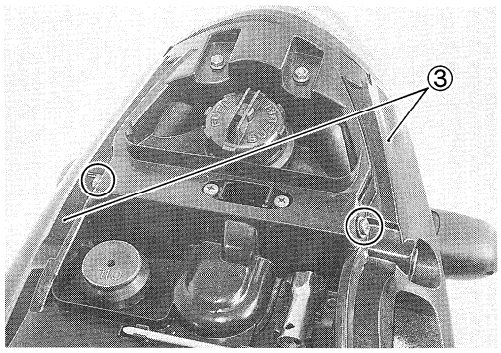


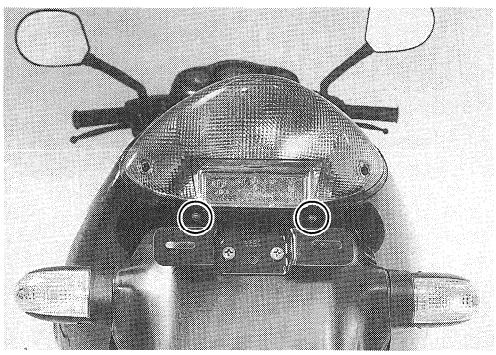
FRAME COVER REMOVAL

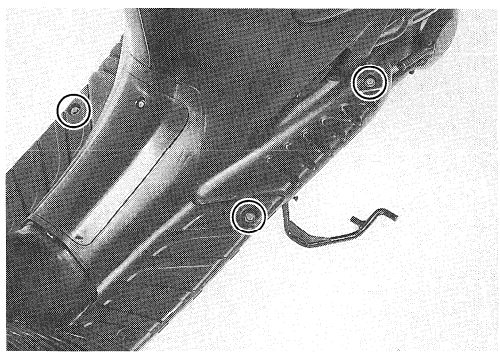
- Remove the lower leg shields and lower side leg shield. (Refer to page 6-2.)
- Remove the seat with the trunk ①.
- Remove the grab bar ②.
- Remove the frame covers and side leg shields ③.







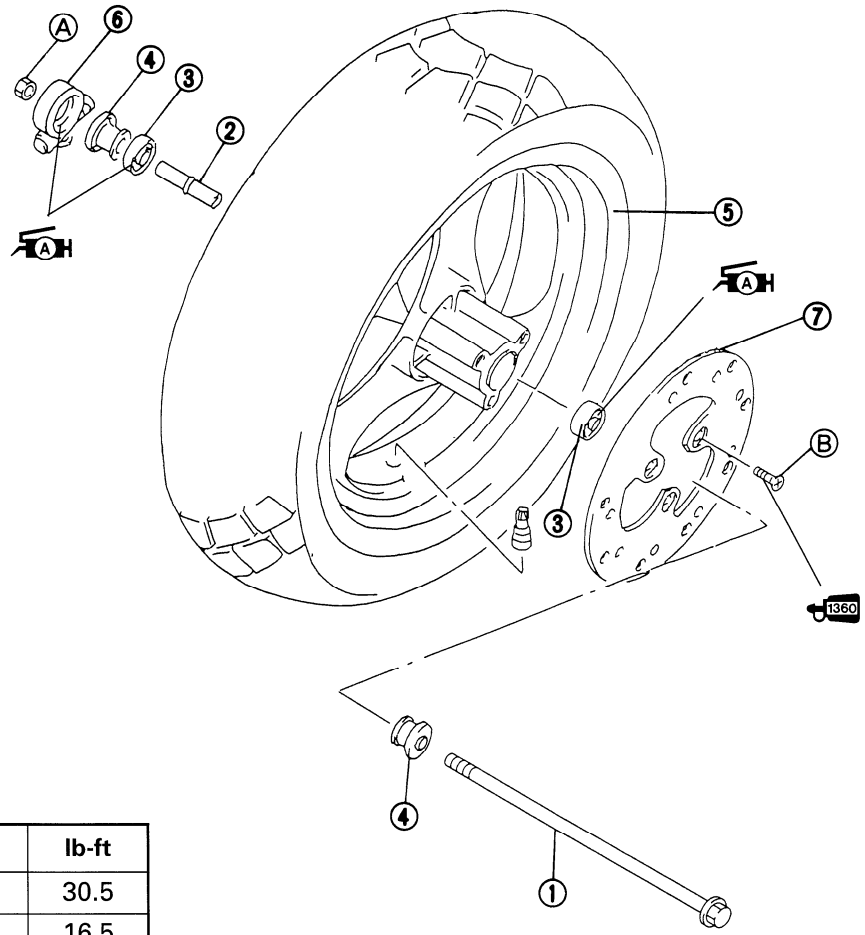




LEG SHIELD AND FRAME COVER REMOUNTING

- Remount the leg shields and frame covers in the reverse order of removal.

FRONT WHEEL

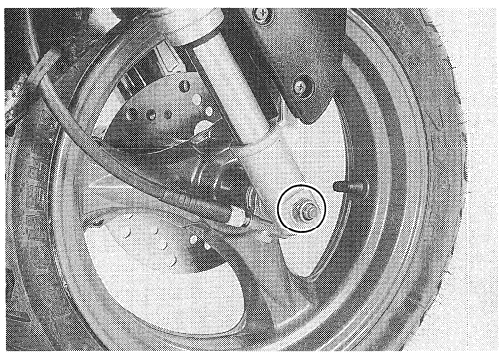


① Front axle
② Spacer
③ Bearing
④ Spacer
⑤ Front wheel
⑥ Speedometer gearbox
⑦ Brake disc
Ⓐ Front axle nut
Ⓑ Brake disc bolt

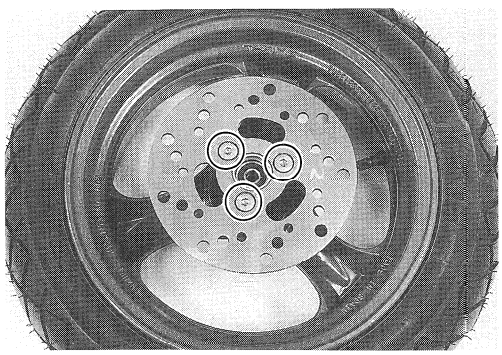
ITEM	N•m	kg-m	lb-ft
Ⓐ	42	4.2	30.5
Ⓑ	23	2.3	16.5

REMOVAL

- Remove the front axle nut.
- Raise the front wheel off the ground by raising the motorcycle with a jack or wooden block.
- Remove the front axle and then the front wheel.



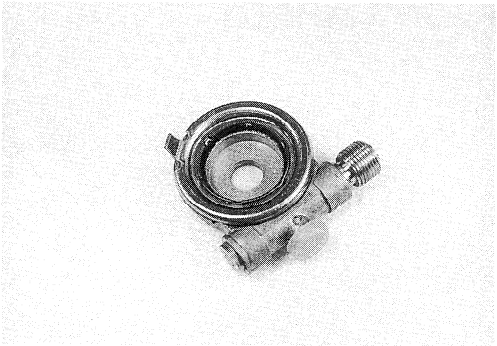
- Remove the brake disc from the front wheel.



INSPECTION AND DISASSEMBLY

SPEEDOMETER GEARBOX DUST SEAL

Inspect the speedometer gearbox dust seal for damage.
If any damage is found, replace the speedometer gearbox.



WHEEL BEARINGS

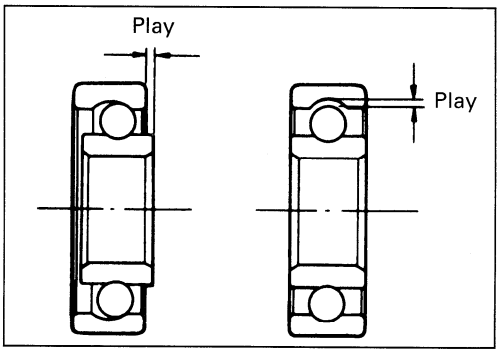
Inspect the play of the wheel bearings by hand while they are in the wheel. Rotate the inner race by hand to inspect for abnormal noise and smooth rotation. Replace the bearing if there is anything unusual.
Remove the wheel bearings as follows:

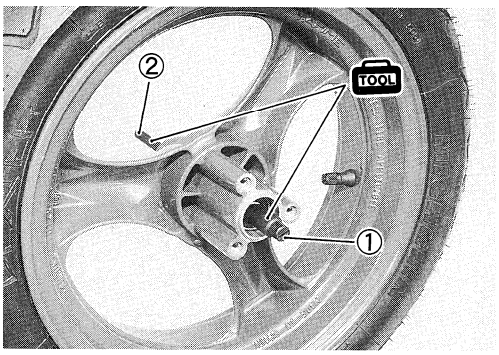
- Insert the bearing remover attachment ① into the wheel bearing.
- Insert the wedge bar ② from the opposite side and lock it into the slit of the bearing remover attachment.
- Drive out the wheel bearing by striking the wedge bar.

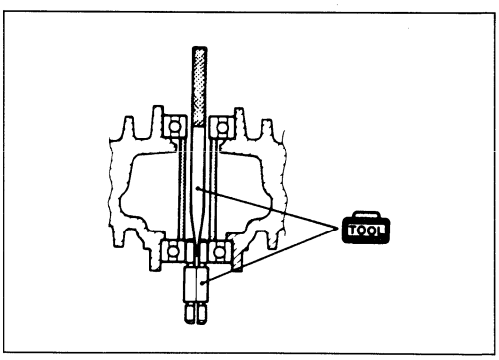
TOOL 09941-50111: Bearing remover

⚠ CAUTION

The removed bearing should be replaced with a new one.



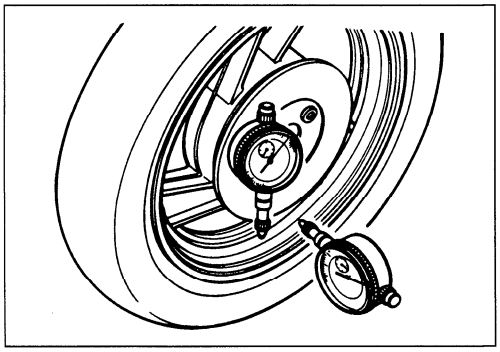




WHEEL

Make sure that the wheel runout (axle and radial) does not exceed the service limit. An excessive amount of runout is usually due to worn or loose wheel bearings and can be corrected by replacing the bearings. If wheel bearing replacement fails to reduce the runout, replace the wheel.

Service Limit (axial and radial): 2.0 mm (0.08 in)



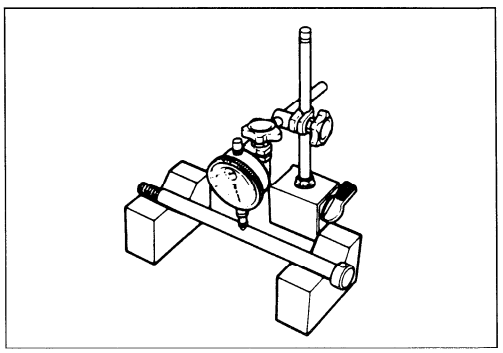
TIRE

Refer to page 2-12.

FRONT AXLE

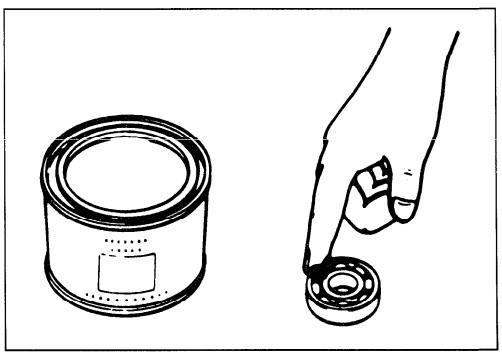
Using a dial gauge, check the front axle runout. If the runout exceeds the limit, replace the front axle.

Service Limit: 0.25 mm (0.010 in)



REASSEMBLY AND REMOUNTING

Reassemble and remount the front wheel in the reverse order or removal and disassembly. Pay attention to the following points:



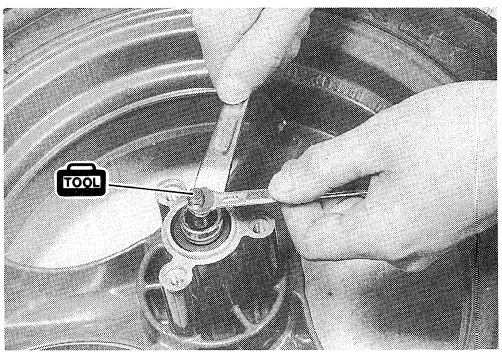
WHEEL BEARING

- Apply grease to the wheel bearings.

99000-25010: SUZUKI SUPER GREASE "A"

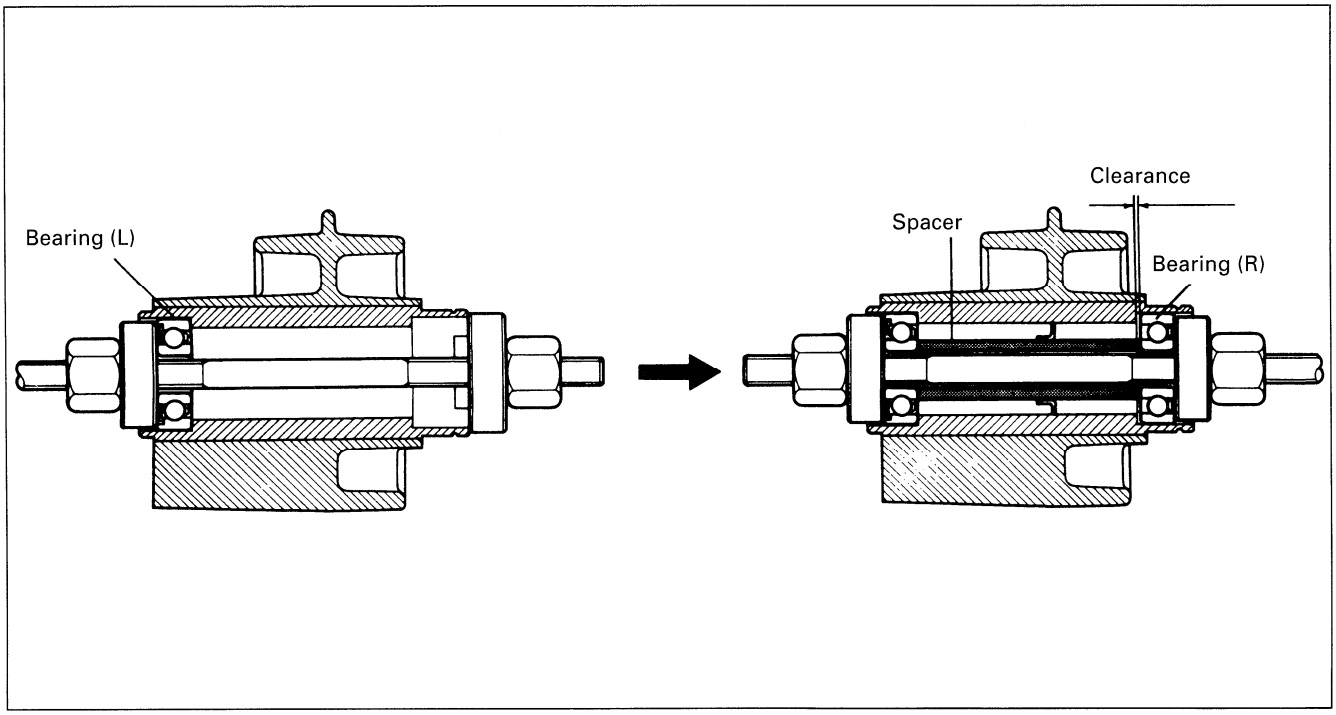
- Install the wheel bearings with the special tool.

09924-84521: Bearing installer set



⚠ CAUTION

First, install the left wheel bearing, then install the right wheel bearing. The sealed cover on the wheel bearing must face out.

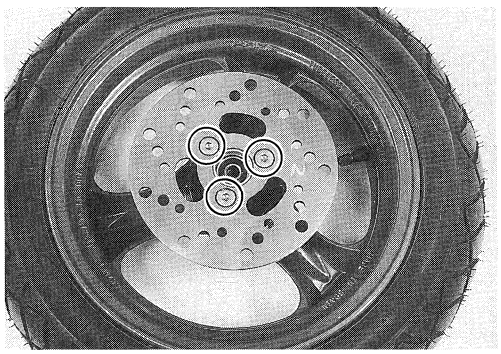


BRAKE DISC

- Make sure that the brake disc is clean and free of any grease. Apply THREAD LOCK SUPER "1360" to the disc mounting bolts and tighten them to the specified torque.

99000-32130: THREAD LOCK SUPER "1360"

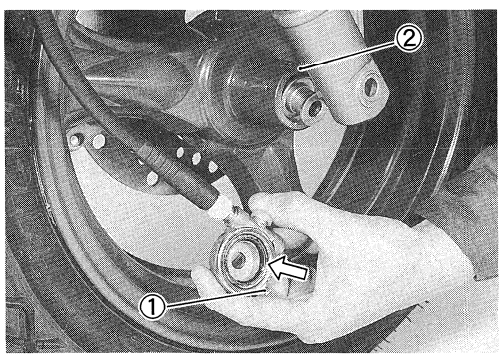
Brake disc bolt: 23 N·m (2.3 kg-m, 16.5 lb-ft)



SPEEDOMETER GEARBOX

- Grease the teeth of the speedometer gear before installing the speedometer gearbox.
- Align the drive lugs ① with the recesses ② on the wheel hub and then fit the speedometer gearbox onto the wheel hub.

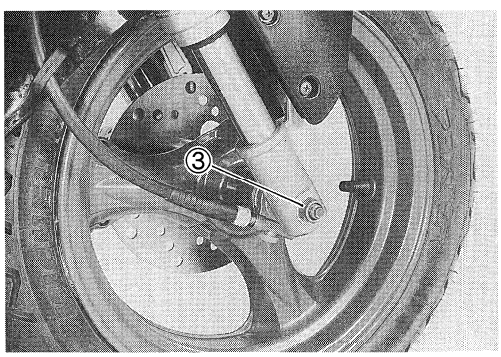
99000-25010: SUZUKI SUPER GREASE "A"



FRONT AXLE

- Tighten the front axle nut ③ to the specified torque.

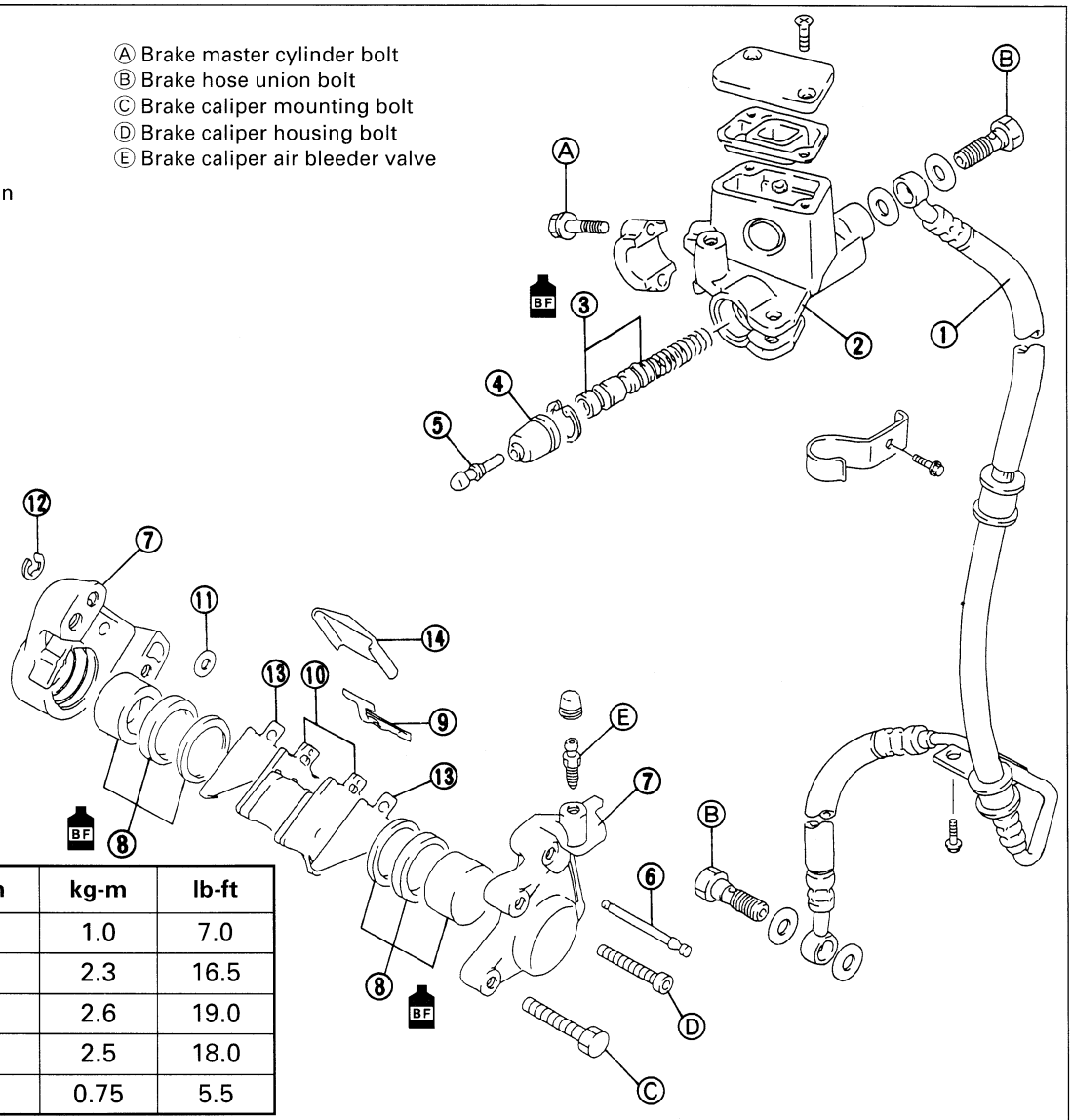
Front axle nut ③: 42 N·m (4.2 kg-m, 30.5 lb-ft)



FRONT BRAKE

① Brake hose
② Master cylinder
③ Piston/cup set
④ Dust boot
⑤ Push rod
⑥ Pad mounting pin
⑦ Caliper
⑧ Piston set
⑨ Pad spring
⑩ Brake pad
⑪ O-ring
⑫ E-ring
⑬ Shim
⑭ Pad cover

Ⓐ Brake master cylinder bolt
Ⓑ Brake hose union bolt
Ⓒ Brake caliper mounting bolt
Ⓓ Brake caliper housing bolt
Ⓔ Brake caliper air bleeder valve



ITEM	N·m	kg-m	lb-ft
Ⓐ	10	1.0	7.0
Ⓑ	23	2.3	16.5
Ⓒ	26	2.6	19.0
Ⓓ	25	2.5	18.0
Ⓔ	7.5	0.75	5.5

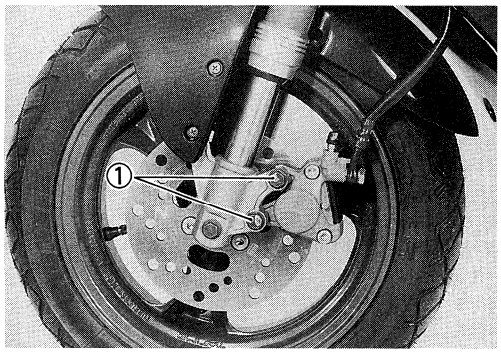
⚠ WARNING

* **This brake system is filled with an ethylene glycol-based DOT 4 brake fluid. Do not use or mix different types of fluid, such as silicone-based or petroleum-based brake fluids.**
* **Do not use any brake fluid taken from old, used or unsealed containers. Never reuse brake fluid left over from the last servicing or which has been stored for long periods of time.**
* **When storing brake fluid, seal the container completely and keep it away from children.**
* **When replenishing brake fluid, take care not to get dust into the fluid.**
* **When washing brake components, use fresh brake fluid. Never use cleaning solvent.**
* **A contaminated brake disc or brake pad reduces braking performance. Discard contaminated pads and clean the disc with high quality brake cleaner or a neutral detergent.**

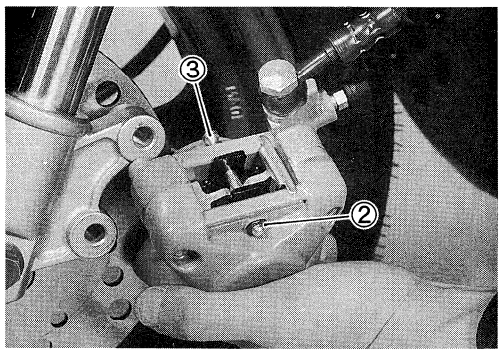
⚠ CAUTION

Handle brake fluid with care: the fluid reacts chemically with paint, plastics, rubber materials etc.

BRAKE PADS REPLACEMENT



- Remove the brake caliper by removing the brake caliper mounting bolts ①.



- Remove the brake pad cover.
- Remove the brake pads by removing the E-ring ② and brake pad mounting pin ③.

⚠ CAUTION

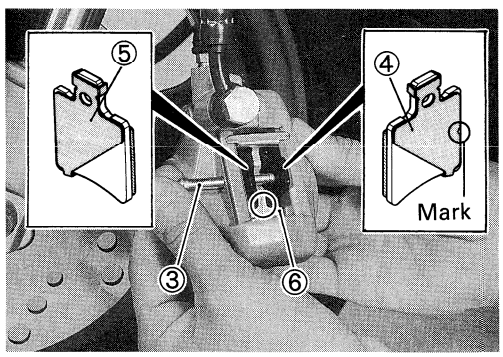
*** Do not operate the front brake lever while removing the pads.**
*** Replace the brake pads as a set, otherwise braking performance will be adversely affected.**

- Reinstall the new brake pads, pad shims, E-ring and brake pad mounting pin.
- Install the brake caliper and tighten the brake caliper mounting bolts to specified torque.

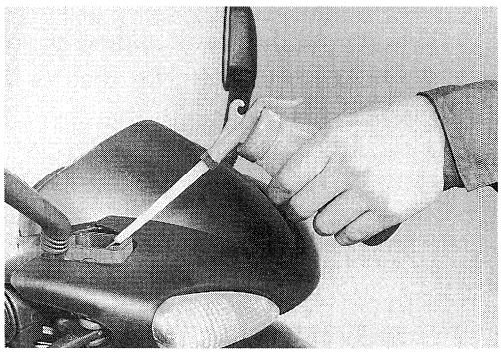
Brake caliper mounting bolt: 26 N·m (2.6 kg-m, 19.0 lb-ft)

NOTE:

* *Install the brake pad shims (④, ⑤) onto the brake pad, as shown in the illustration.*
* *The arrow mark on the brake pad spring ⑥ must point in the direction of brake disc rotation.*
* *After replacing the brake pads, pump the brake lever a few times to make sure that the brake operates correctly and then check the brake fluid level.*



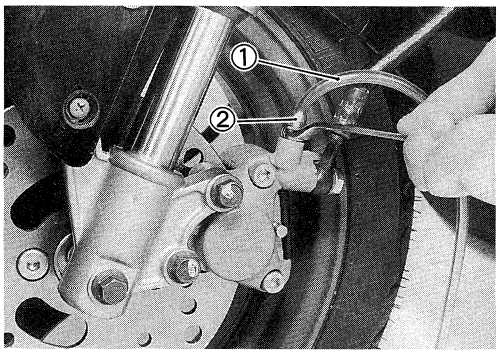
BRAKE FLUID REPLACEMENT



- Place the motorcycle on a level surface and keep the handlebar straight.
- Remove the master cylinder reservoir cap and diaphragm.
- Suck-up the old brake fluid as much as possible.
- Fill the reservoir with fresh brake fluid.

BF Specification and classification: DOT 4

- Connect a clear hose ① to the air bleeder valve ② and insert the other end of the hose into a receptacle.
- Loosen the bleeder valve and pump the brake lever until the old brake fluid is completely out of the brake system.
- Close the air bleeder valve and disconnect the clear hose. Fill the reservoir with fresh brake fluid to the upper end of the inspection window.

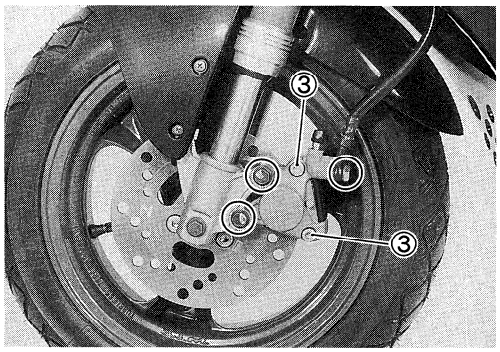


⚠ CAUTION

Bleed air in the brake fluid circuit. (Refer to page 2-10.)

BRAKE CALIPER REMOVAL AND DISASSEMBLY

- Disconnect the brake hose from the caliper by removing the union bolt and allow the brake fluid to drain into a suitable receptacle.
- Slightly loosen the brake caliper housing bolts ③.
- Remove the brake caliper by removing the caliper mounting bolts.



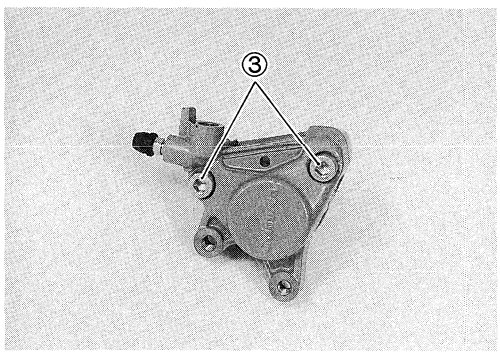
⚠ CAUTION

Never reuse brake fluid left over from previous servicing and which has been stored for long periods of time.

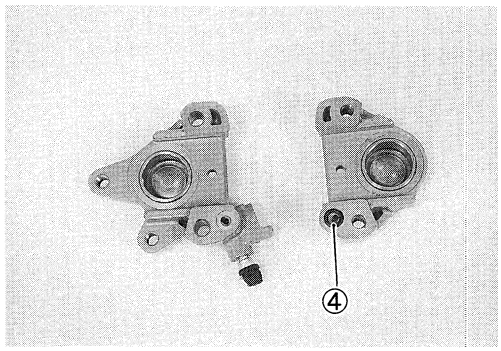
⚠ WARNING

Brake fluid, if it leaks, will interfere with safe running and discolor painted surfaces. Check the brake hose and hose joints for cracks and oil leakage.

- Remove the brake pads. (Refer to page 6-9.)
- Remove the brake caliper housing bolts ③.



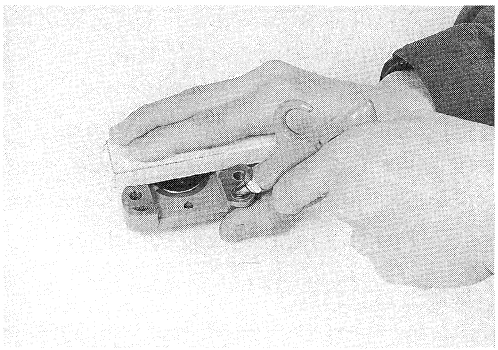
- Separate the brake caliper.
- Remove the O-ring ④.



⚠ CAUTION

Do not reuse the O-ring to prevent fluid leakage.

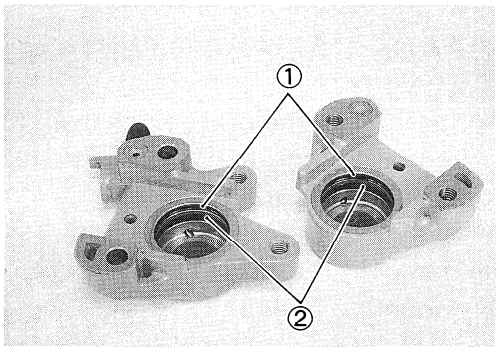
- Place a rag over the piston to prevent it from popping out and then force out the piston with compressed air.



⚠ CAUTION

Do not use high pressure air to prevent piston damage.

- Remove the dust seals ① and piston seals ②.



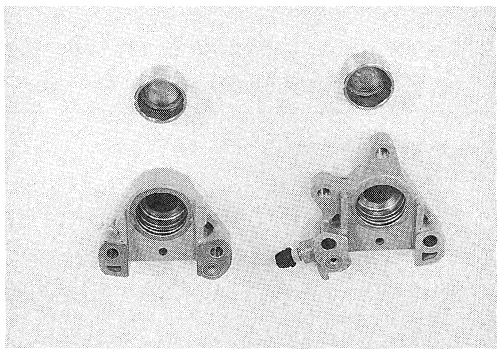
⚠ CAUTION

Do not reuse the dust seals and piston seals to prevent fluid leakage.

BRAKE CALIPER INSPECTION

CALIPER

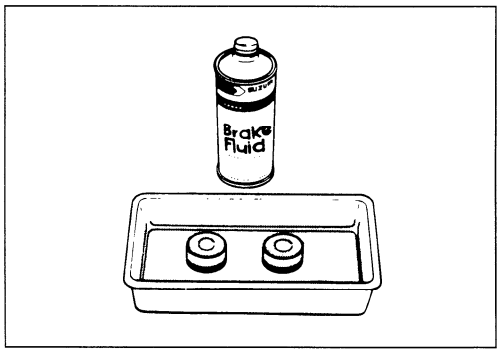
Inspect the caliper cylinder wall for nicks, scratches or other damage.



PISTON

Inspect the piston surface for scratches or other damage.

BRAKE CALIPER REASSEMBLY AND REMOUNTING



Reassemble the caliper in the reverse order of removal and disassembly. Pay attention to the following points:

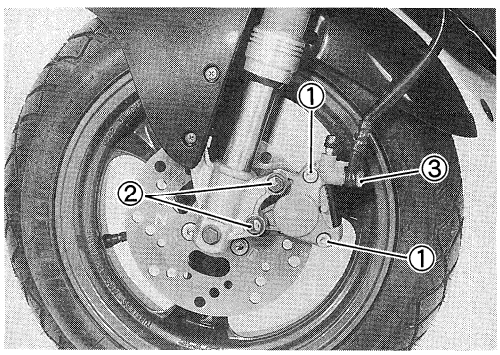
- Wash the caliper bore and piston with new brake fluid. Thoroughly wash the dust seal groove and piston seal groove.

Specification and classification: DOT 4

⚠ CAUTION

*** When washing the components, use the specified brake fluid. Never use different types of fluid or cleaning solvents such as gasoline, kerosine etc.**
*** Do not wipe the brake fluid off after washing the components.**
*** Replace the piston seals and dust seals with new ones. Apply the brake fluid to both seals when installing them.**

- Tighten each bolt to the specified torque.



Brake caliper housing bolt
①: 25 N•m (2.5 kg-m, 18.0 lb-ft)
Brake caliper mounting bolt
②: 26 N•m (2.6 kg-m, 19.0 lb-ft)
Brake hose union bolt
③: 23 N•m (2.3 kg-m, 16.5 lb-ft)

NOTE:
Before remounting the brake caliper, push the piston all the way into the caliper.

⚠ WARNING

Bleed air from the system after reassembling the caliper. (Refer to page 2-10.)

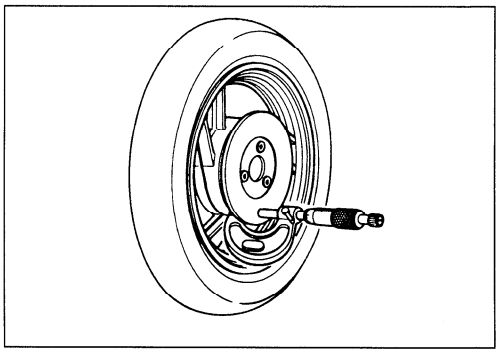
BRAKE DISC INSPECTION

- Remove the front wheel. (Refer to page 6-4.)

With the brake disc mounted on the wheel, measure the disc thickness with a micrometer.

Service Limit: 3.5 mm (0.14 in)

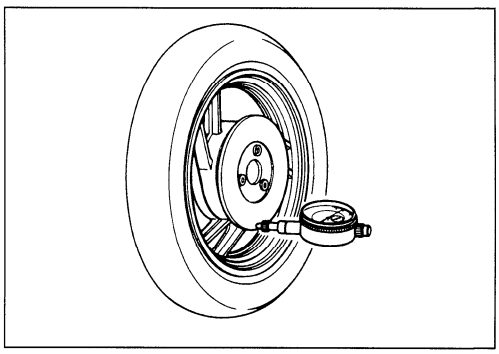
TOOL 09900-20205: Micrometer (0 – 25 mm)



With the brake disc mounted on the wheel, measure the runout with a dial gauge, as shown.

Service Limit: 0.30 mm (0.012 in)

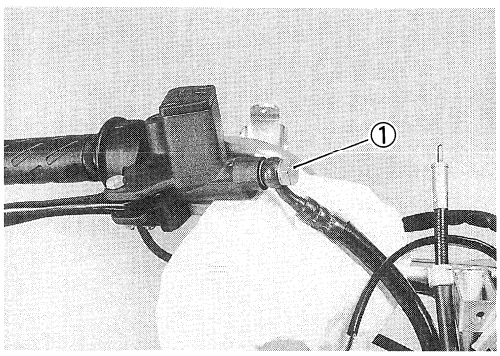
TOOL 09900-20606: Dial gauge (1/100 mm)
09900-20701: Magnetic stand



- If either measurement exceeds the service limit, replace the brake disc. (Refer to pages 6-4 and 6-7.)
- Install the front wheel.

MASTER CYLINDER REMOVAL AND DISASSEMBLY

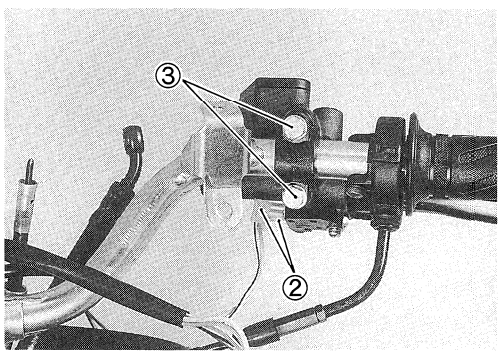
- Remove the handlebar cover. (Refer to page 6-20.)
- Place a rag underneath the union bolt on the master cylinder to catch any spilt brake fluid. Remove the union bolt ① and disconnect the brake hose/master cylinder joint.



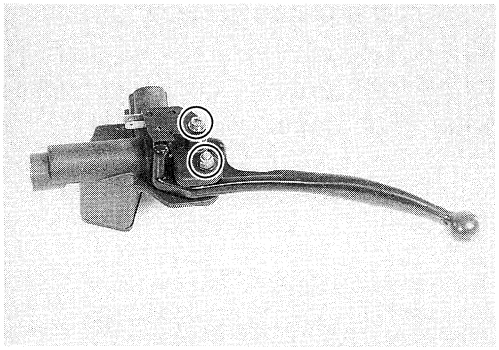
⚠ CAUTION

Immediately wipe off any brake fluid contacting any part of the motorcycle. The brake fluid reacts chemically with paint, plastics and rubber materials, etc. and will damage the severely.

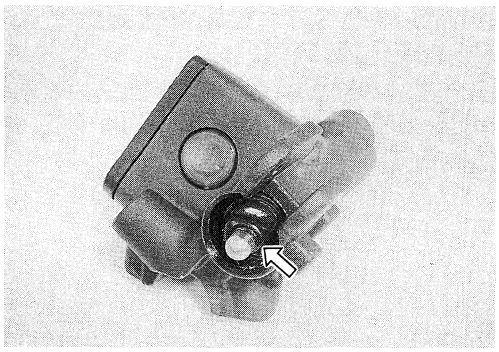
- Disconnect the brake light switch lead wires ② (front brake).
- Remove the master cylinder assembly by removing the clamp bolts ③.



- Remove the brake lever and brake light switch.

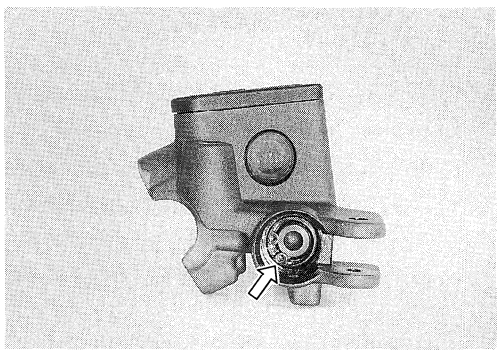


- Remove the dust boot and push rod.

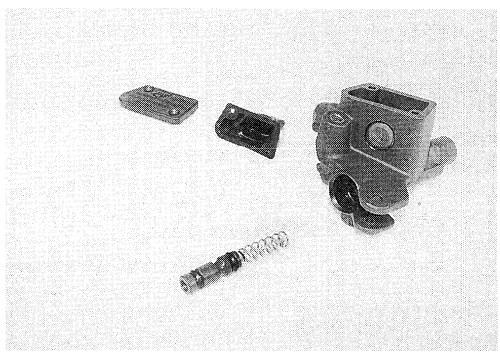


- Remove the circlip with the special tool.

TOOL 09900-06108: Snap ring pliers

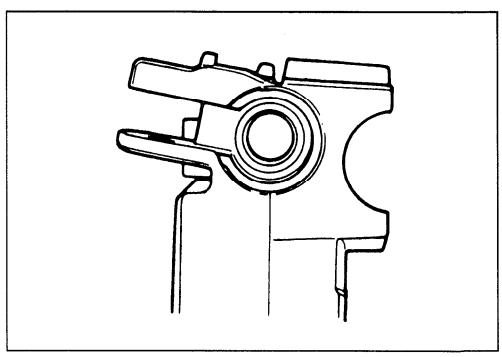


- Remove the piston/cap set (with the return spring).
- Remove the master cylinder reservoir cap and diaphragm.
- Drain the brake fluid.

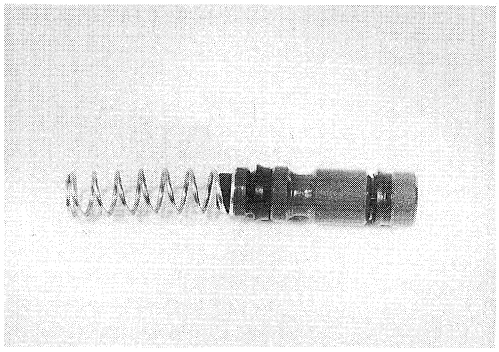


MASTER CYLINDER INSPECTION

Inspect the master cylinder bore for any scratches or other damage.



Inspect the piston surface for any scratches or other damage.
Inspect the primary cup, secondary cup and dust boot for wear or damage.

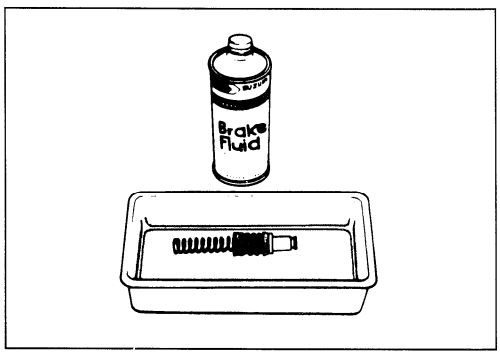


MASTER CYLINDER REASSEMBLY AND REMOUNTING

Reassemble and remount the master cylinder in the reverse order of removal and disassembly. Pay attention to the following points:

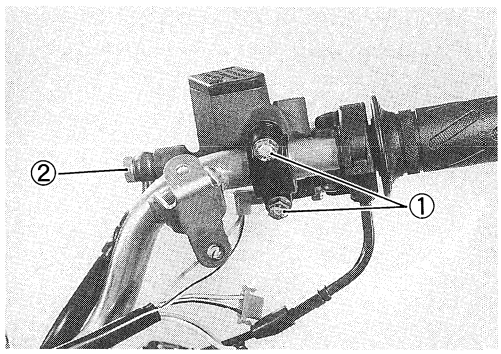
⚠ CAUTION

*** Wash the master cylinder components with fresh brake fluid before reassembly. Never use cleaning solvent or gasoline to wash them.**
*** Do not wipe the components with a rag.**
*** Apply brake fluid to the cylinder bore and all of the components which go into the bore.**



BF Specification and classification: DOT 4

- When remounting the master cylinder onto the handlebar, tighten the upper clamp bolt first.
- Tighten the brake hose union bolt.



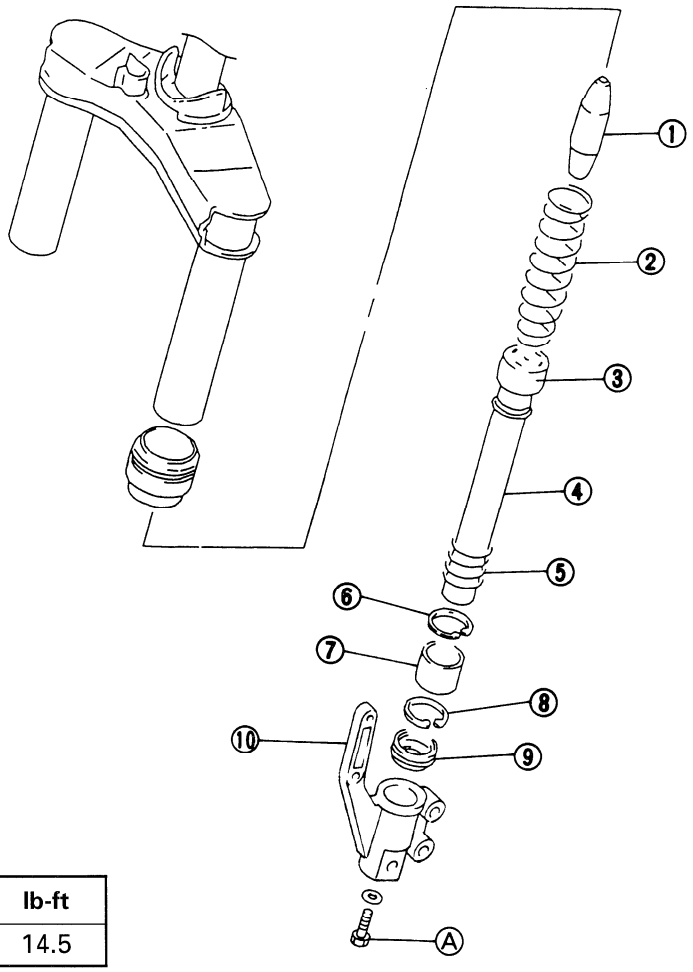
Master cylinder clamp bolt
①: 10 N·m (1.0 kg-m, 7.0 lb-ft)
Brake hose union bolt
②: 23 N·m (2.3 kg-m, 16.5 lb-ft)

⚠ WARNING

Bleed air from the brake system after remounting the master cylinder. (Refer to page 2-10.)

FRONT SUSPENSION

① Damper
② Upper spring
③ Upper bushing
④ Inner tube
⑤ Lower spring
⑥ Circlip
⑦ Lower bushing
⑧ Stopper ring
⑨ Dust seal
⑩ Brake caliper bracket
Ⓐ Brake caliper bracket bolt

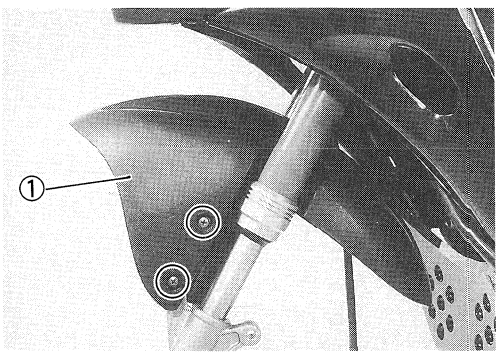


ITEM	N•m	kg-m	lb-ft
Ⓐ	20	2.0	14.5

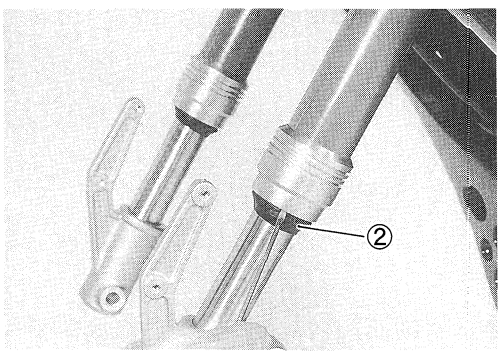
REMOVAL AND DISASSEMBLY

- Remove the front wheel. (Refer to page 6-4.)
- Remove the brake caliper. (Refer to page 6-9.)
- Remove the front fender ①.

The following steps are for each fork leg.



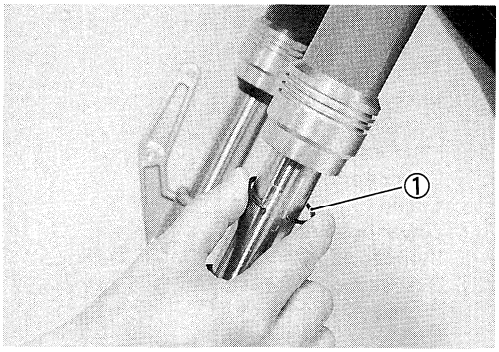
- Remove the dust seal ②.



- Remove the stopper ring ①

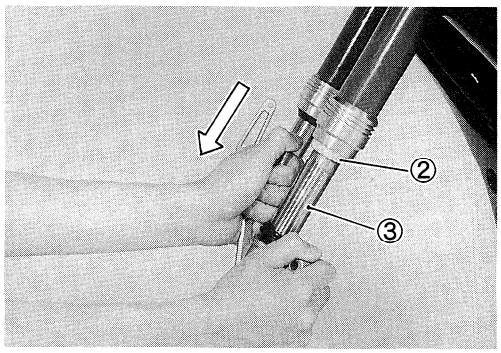
⚠ CAUTION

The removed stopper ring ① should be replaced with a new one.

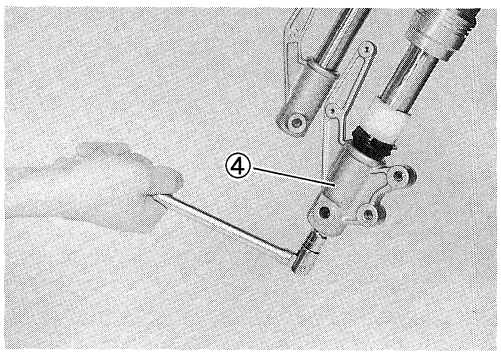


- Remove the lower bushing ②.

NOTE:
Pull the inner tube ③ down when removing the lower bushing ②.



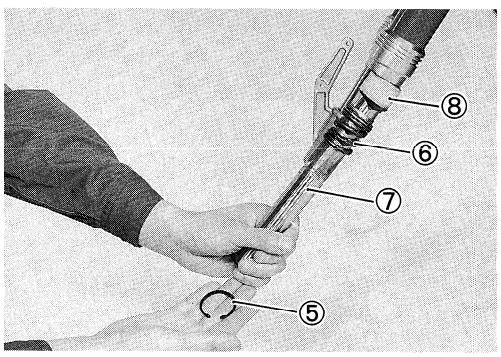
- Remove the brake caliper bracket ④.



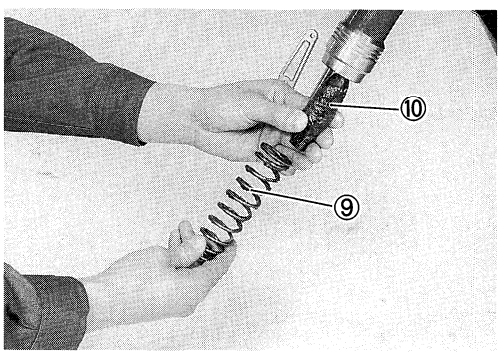
- Remove the circlip ⑤, lower spring ⑥, inner tube ⑦ and upper bushing ⑧.

⚠ CAUTION

The removed circlip ⑤ should be replaced with a new one.



- Remove the upper spring ⑨ and damper ⑩.

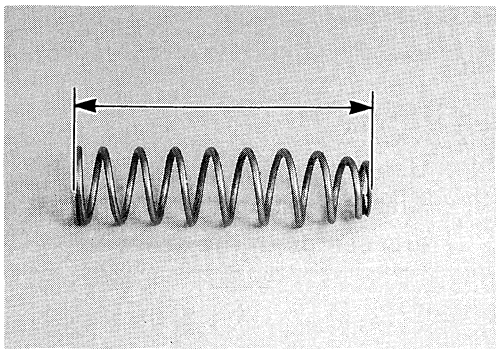


INSPECTION

FORK SPRING

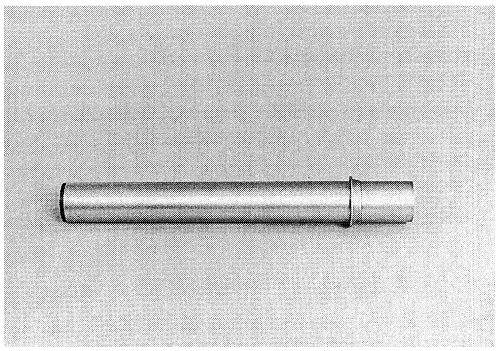
Measure the fork spring free length. If it is shorter than the service limit, replace it with a new one.

Service Limit: 122 mm (4.8 in)



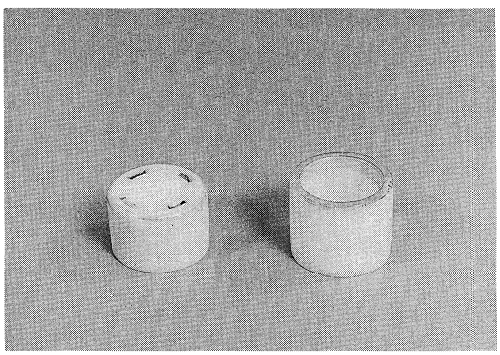
INNER TUBE

Inspect the inner tube sliding surface for any scuffing.



BUSHINGS

Inspect the bushings for wear or damage.



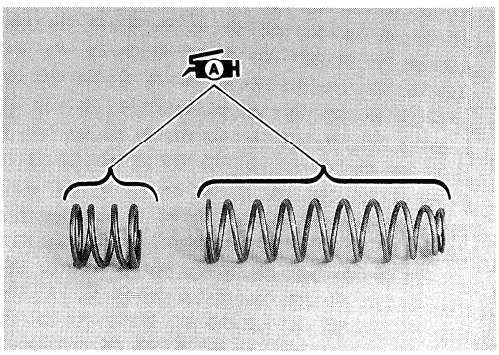
REASSEMBLY AND REMOUNTING

Reassemble and remount the front suspension in the reverse order of removal and disassembly. Pay attention to the following points:

DAMPER AND SPRING

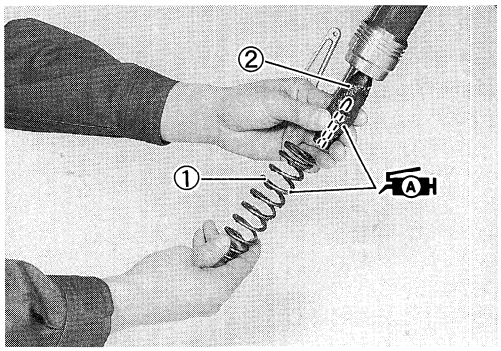
- Apply grease (15 g) to the damper and springs.

99000-25010: SUZUKI SUPER GREASE "A"



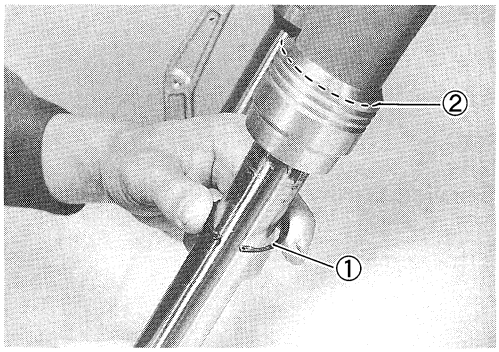
⚠ CAUTION

When installing the upper spring ① and damper ②, face the smaller diameter end of the upper spring and the hollow end of the damper towards the wheel.



CIRCLIP

- Install the circlip ① into the groove ②.



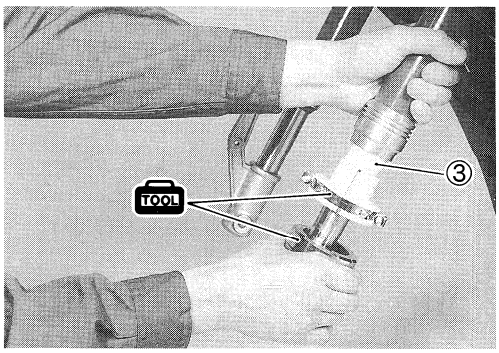
⚠ CAUTION

* **Use a new circlip.**
* **After installing the circlip, make sure that it is properly seated in the groove.**

BUSHING

- Install the lower bushing ③ with the special tool.

TOOL 09940-52860: Front fork oil seal installer

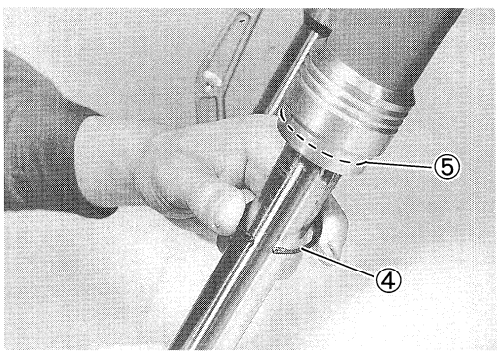


STOPPER RING

- Install the stopper ring ④ into the ring groove ⑤.

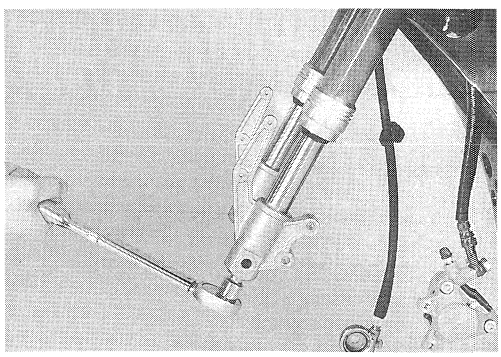
⚠ CAUTION

* **Use a new stopper ring.**
* **After installing the stopper ring, make sure that it is properly seated in the groove.**

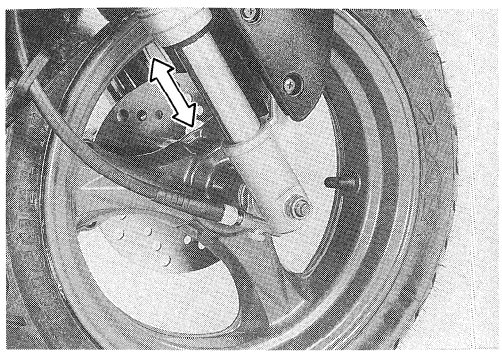


- Tighten the brake caliper bracket mounting bolt to the specified torque.

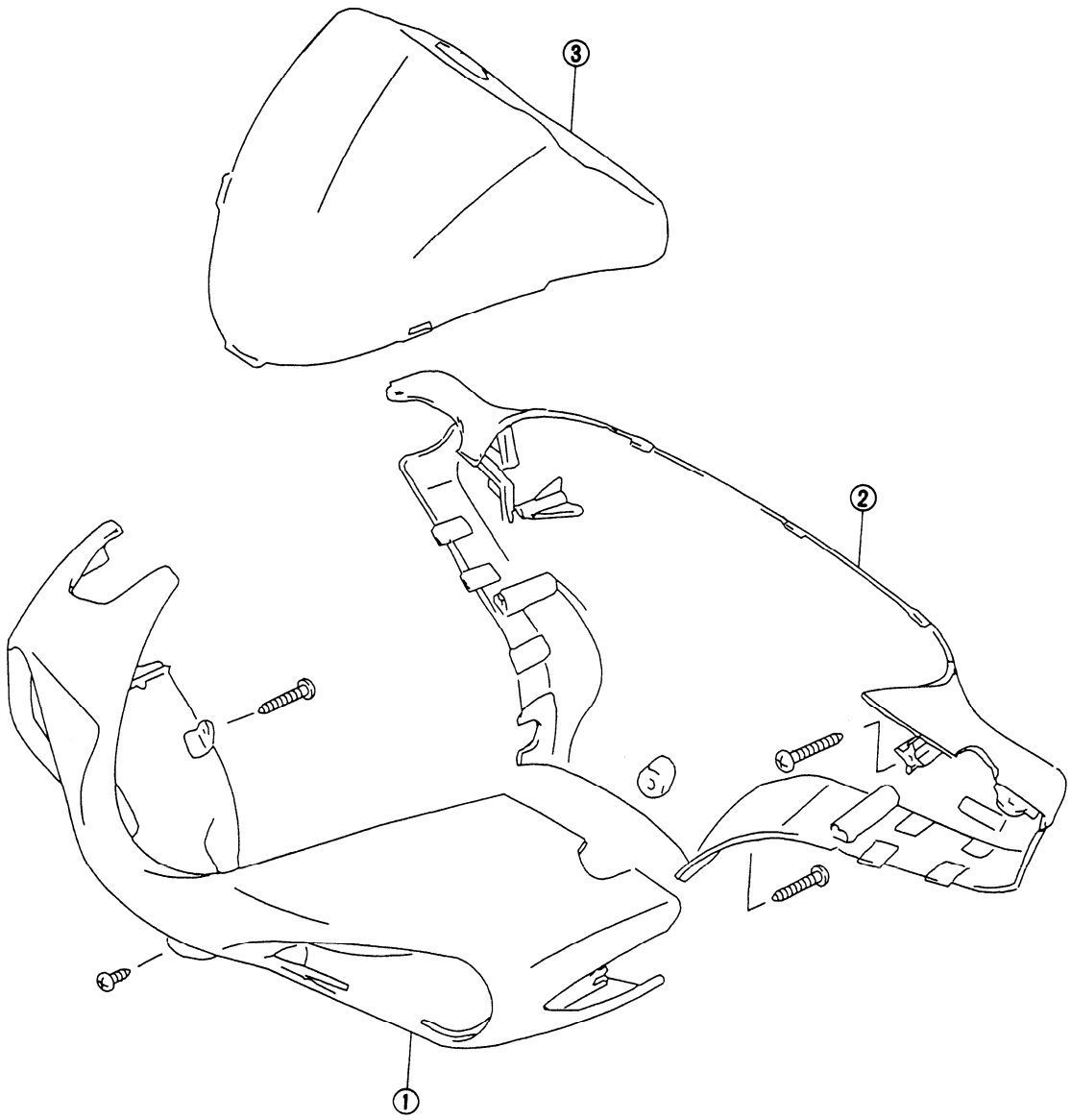
Brake caliper bracket mounting bolt:
20 N·m (2.0 kg-m, 14.5 lb-ft)



NOTE:
Before tighten the front axle nut, move the front fork up and down 4 or 5 times.



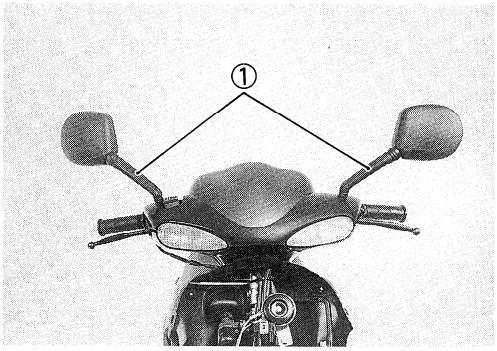
HANDLEBAR COVERS/SPEEDOMETER COVER

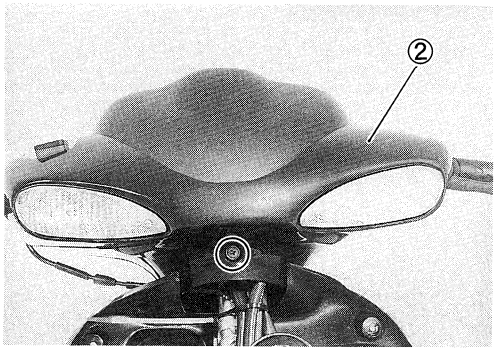


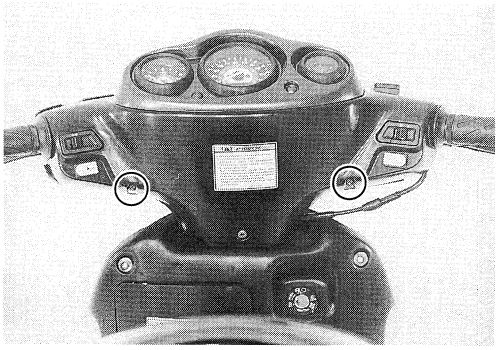
① Front handlebar cover
② Rear handlebar cover
③ Speedometer cover

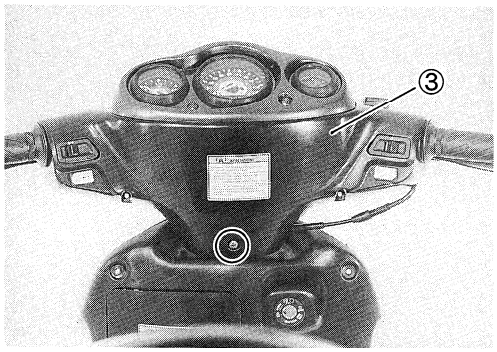
REMOVAL

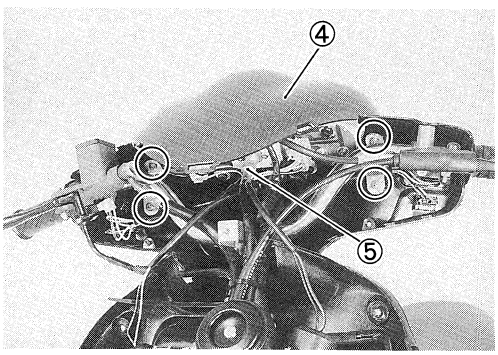
- Remove the front leg shield. (Refer to page 6-2.)
- Remove the rear view mirrors ①.
- Remove the front handlebar cover ②.
- Remove the rear handlebar cover ③.
- Remove the speedometer cover ④ and disconnect the speedometer cable ⑤.











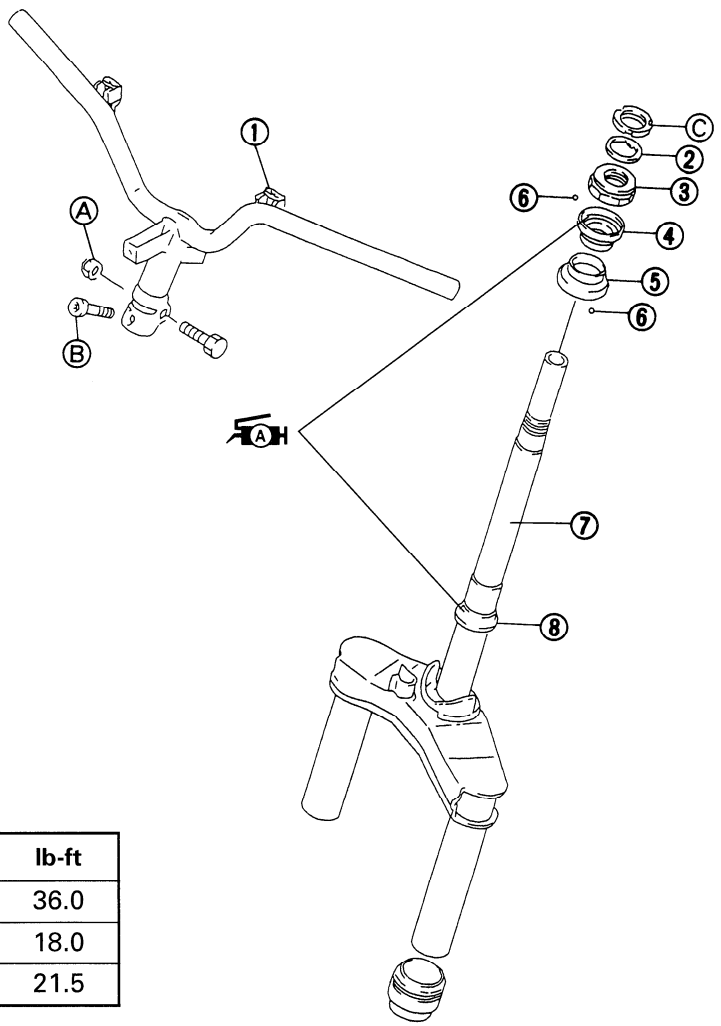
REMOUNTING

Remount the handlebar covers and the speedometer cover in the reverse order of removal.

STEERING STEM

① Handlebar
② Washer
③ Steering stem nut
④ Inner upper race
⑤ Inner lower race
⑥ Steel ball
⑦ Steering stem
⑧ Outer lower race

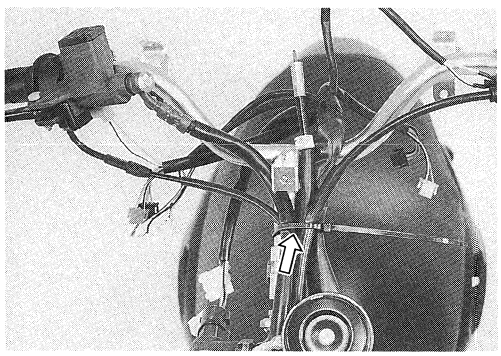
Ⓐ Handlebar clamp nut
Ⓑ Handlebar set bolt
Ⓒ Steering stem lock nut



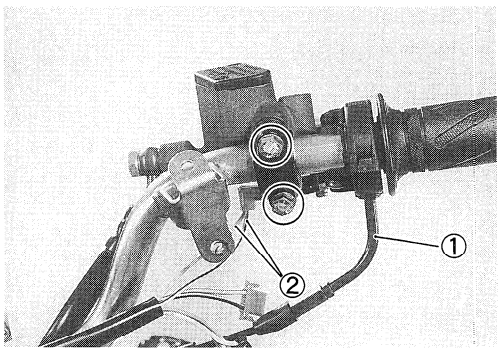
ITEM	N•m	kg-m	lb-ft
Ⓐ	50	5.0	36.0
Ⓑ	25	2.5	18.0
Ⓒ	30	3.0	21.5

REMOVAL AND DISASSEMBLY

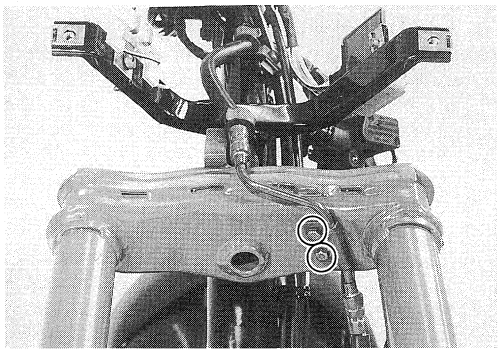
- Remove the front leg shield and leg shield. (Refer to page 6-2.)
- Remove the front suspension. (Refer to page 6-16.)
- Remove the handlebar covers and speedometer cover. (Refer to page 6-20.)
- Remove the cable clamp.



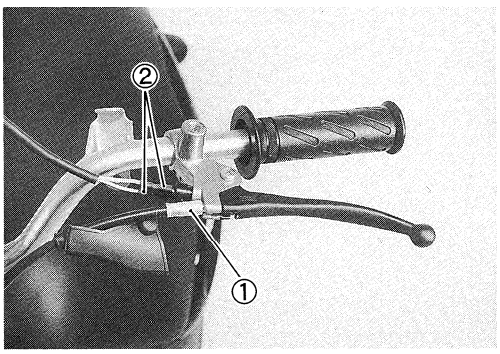
- Remove the throttle cable ① by removing the throttle grip case screws.
- Remove the brake master cylinder.
- Disconnect the brake light switch lead wires ② (front brake).



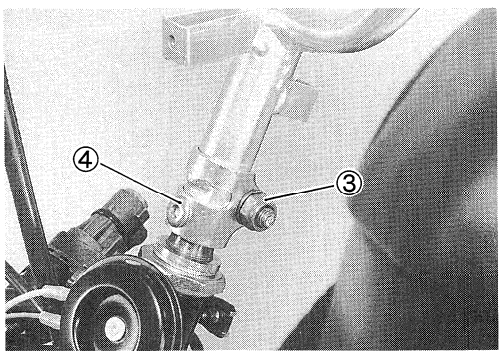
- Remove the brake pipe mount bolt.



- Remove the rear brake cable ①.
- Disconnect the brake light switch lead wires ② (rear brake).

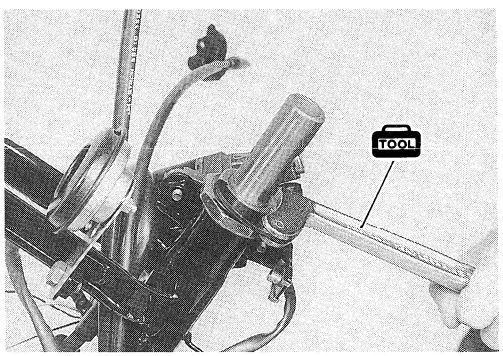


- Remove the handlebar by removing the clamp nut ③ and set bolt ④.



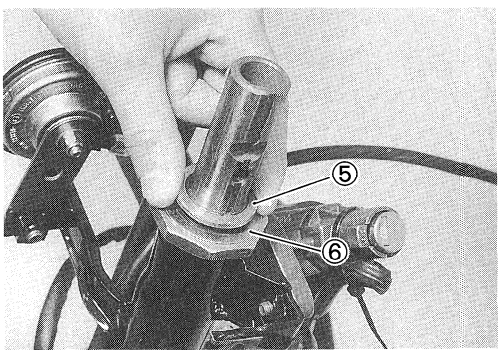
- Remove the steering stem lock nut with the special tool.

09910-60611: Universal clamp wrench



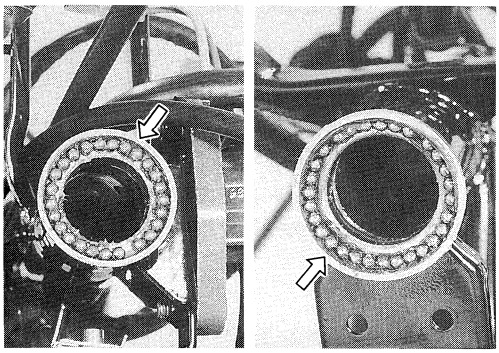
- Remove the washer ⑤.
- Remove the steering stem by removing the steering stem nut ⑥.

NOTE:
Hold the steering stem bracket to prevent it from falling.

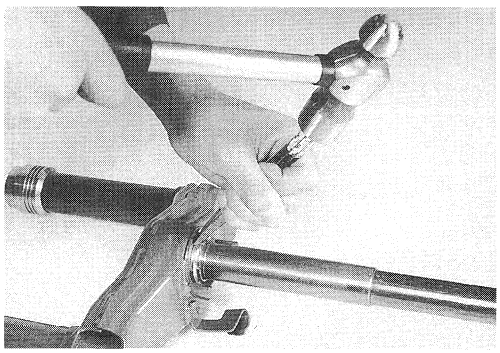


- Remove the upper and lower steel balls.

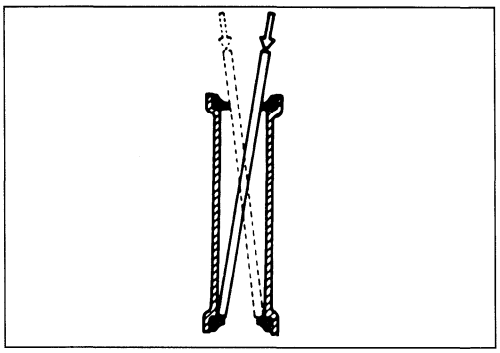
Upper: 25 pcs
Lower: 30 pcs



- Remove the outer lower race with a chisel.



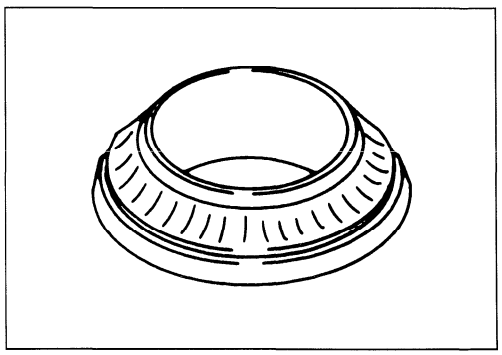
- Drive out the upper and lower races.



INSPECTION

Inspect the removed parts for the following abnormalities.

* Steering race wear and brinelling.
* Worn and damaged steel balls.
* Distortion of steering stem or handlebar.



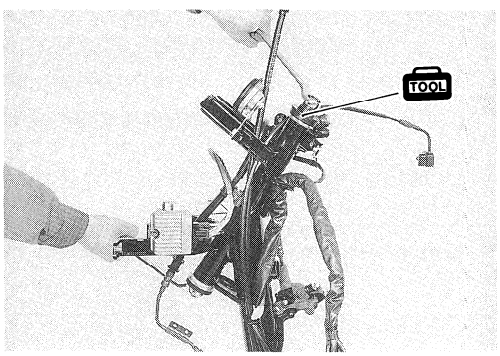
REASSEMBLY AND REMOUNTING

Reassemble and remount the steering stem and handlebar in the reverse order of removal and disassembly. Pay attention to the following steps:

UPPER AND LOWER RACES

- Press in the upper and lower races with the special tool.

TOOL 09941-34513: Steering inner race installer

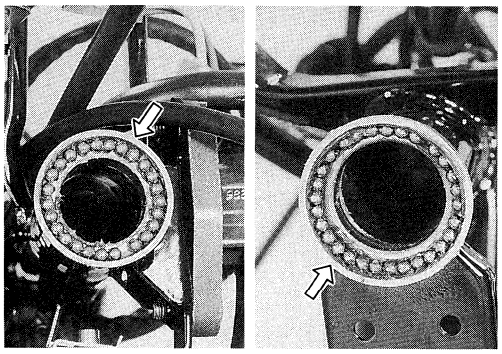


STEEL BALL

- Apply grease to the steering races when installing the upper and lower steel balls.

99000-25010: SUZUKI SUPER GREASE "A"

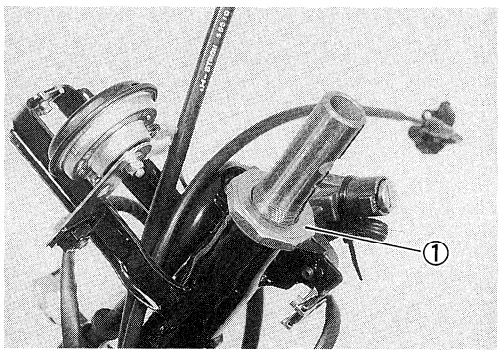
Number of steel balls	Upper	25 pcs
	Lower	30 pcs



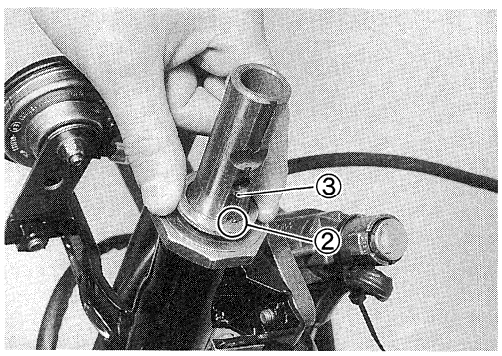
STEERING STEM NUT

- Tighten the steering stem nut ①, then loosen it 1/8-1/4 of a turn.

NOTE:
This adjustment will vary from motorcycle to motorcycle. Make sure that the steering turns smoothly and easily; in both directions.



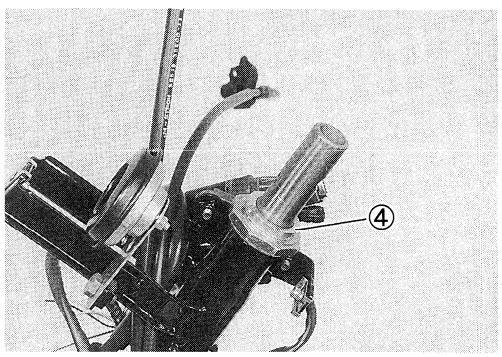
- When installing the washer, align the tongue ② of the washer with the groove ③ of the steering stem shaft.



- Tighten the steering stem lock nut ④ to the specified torque with the special tool.

Steering stem lock nut: 30 N•m (3.0 kg-m, 21.5 lb-ft)

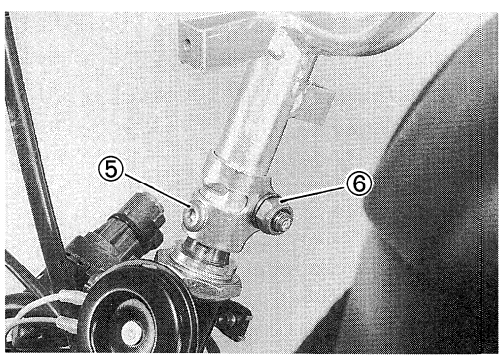
09910-60611: Universal clamp wrench



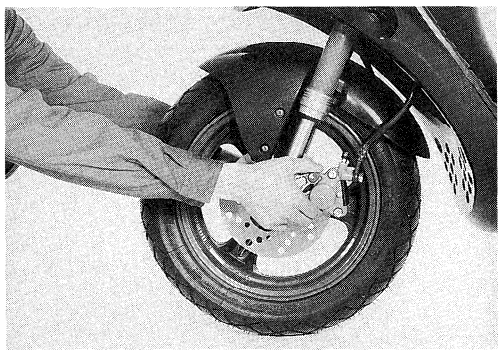
- Finger tighten the handlebar set bolt ⑤ and clamp nut ⑥ and then tighten them to the specified torque.

Set bolt ⑤: 25 N•m (2.5 kg-m, 18.0 lb-ft)

Clamp nut ⑥: 50 N•m (5.0 kg-m, 36.0 lb-ft)



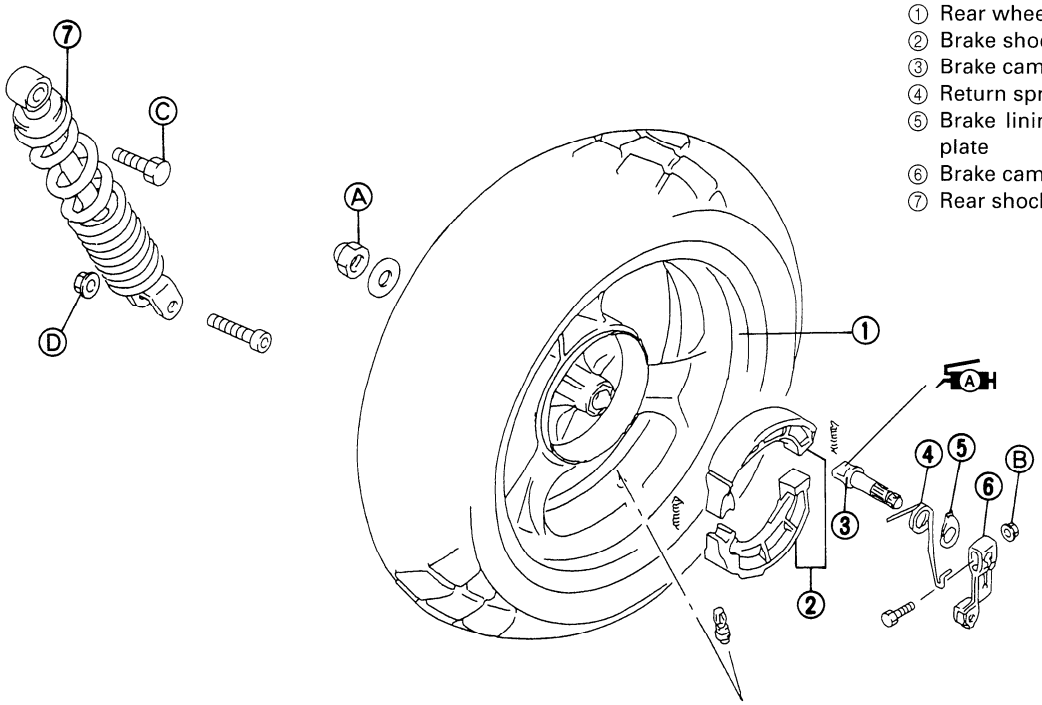
NOTE:
Hold the front fork legs, move them back and forth and make sure that the steering is not loose.



⚠ CAUTION

After performing the adjustment and installing the handlebar, "rock" the front wheel assembly forward and backward to ensure that there is no play and that the procedure was accomplished correctly. Finally, check to make sure that the steering stem moves freely from left to right with its own weight. If play or stiffness is noticeable, re-adjust the steering stem nut.

REAR WHEEL, BRAKE AND REAR SHOCK ABSORBER



① Rear wheel
② Brake shoe
③ Brake cam
④ Return spring
⑤ Brake lining wear indicator plate
⑥ Brake cam lever
⑦ Rear shock absorber

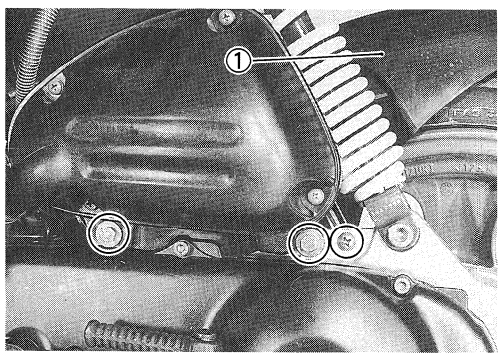
Ⓐ Rear axle nut
Ⓑ Rear brake cam lever nut
Ⓒ Rear shock absorber bolt
Ⓓ Rear shock absorber nut

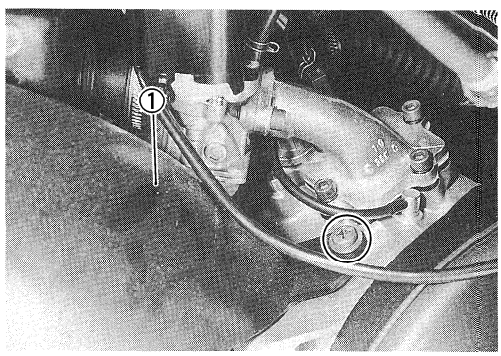
ITEM	N•m	kg-m	lb-ft
Ⓐ	75	7.5	54.0
Ⓑ	10	1.0	7.0
Ⓒ	29	2.9	21.0
Ⓓ	35	3.5	25.5

REMOVAL AND DISASSEMBLY

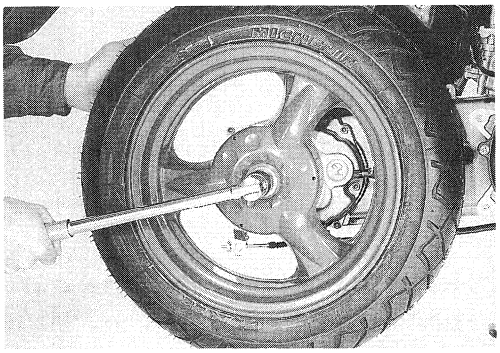
REAR WHEEL AND BRAKE

- Place the motorcycle on level ground.
- Support the motorcycle with a jack.
- Remove the muffler. (Refer to page 3-5.)
- Remove the air cleaner mounting bolts and rear fender ①.

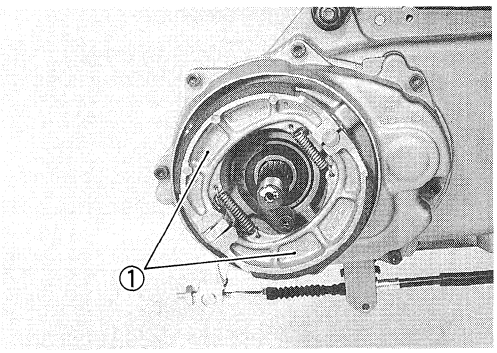




- Remove the rear wheel.

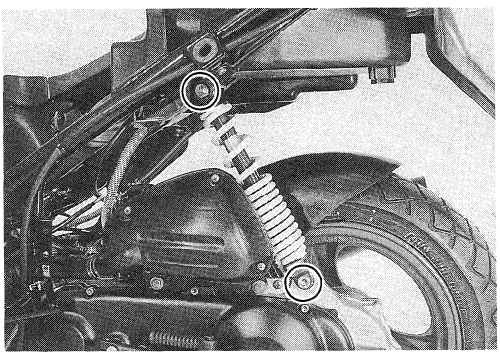


- Remove the brake shoes ①.



REAR SHOCK ABSORBER

- Remove the frame cover (L) and side leg shield (L). (Refer to page 6-3.)
- Remove the rear shock absorber.

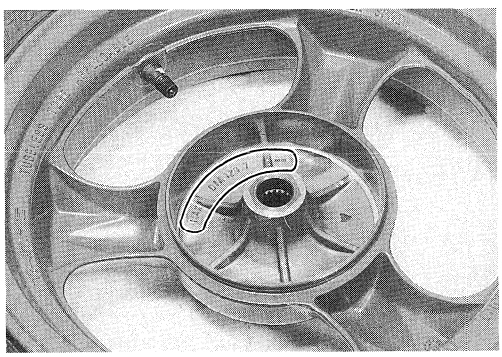


INSPECTION

BRAKE DRUM

Inspect the brake drum and measure the brake drum I.D. to determine the extent of wear. Replace the brake drum if the measurement exceeds the service limit. The value of this limit is indicated inside the drum.

Service Limit: 120.7 mm (4.75 in)



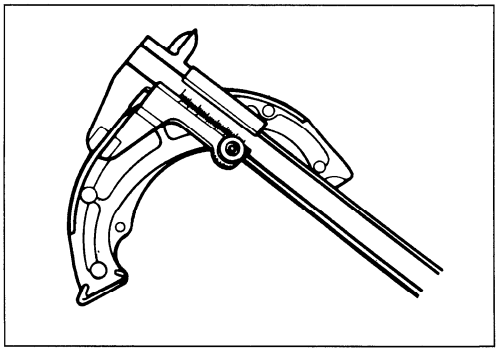
TIRE

Refer to page 2-12.

BRAKE SHOE

Measure the thickness of the brake shoes. Replace the brake shoes if the measurement exceeds the service limit.

Service Limit: 1.5 mm (0.06 in)

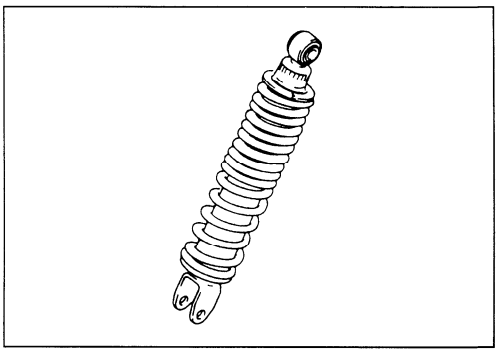


⚠ CAUTION

Replace the brake shoes as a set, otherwise braking performance will be adversely affected.

REAR SHOCK ABSORBER

Inspect the rear shock absorber for oil leakage or other damage.

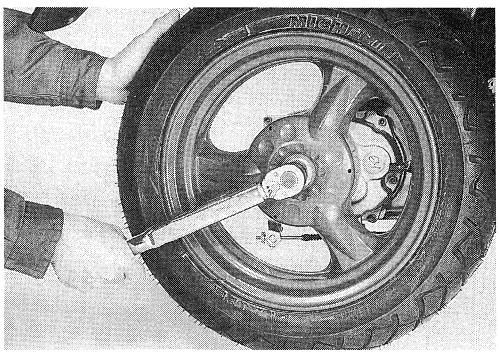


⚠ CAUTION

Do not attempt to disassemble the shock absorber. It is not serviceable.

REASSEMBLY AND REMOUNTING

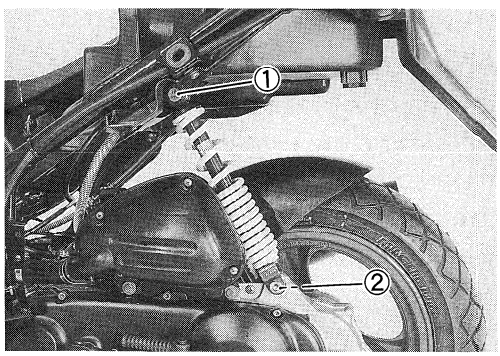
Reassemble and remount the rear wheel, rear brake and rear shock absorber in the reverse order of removal and disassembly.



- Tighten the rear axle nut to the specified torque.

Rear axle nut: 75 N•m (7.5 kg-m, 54.0 lb-ft)

- Tighten the rear shock absorber upper bolt and lower nut to the specified torque.



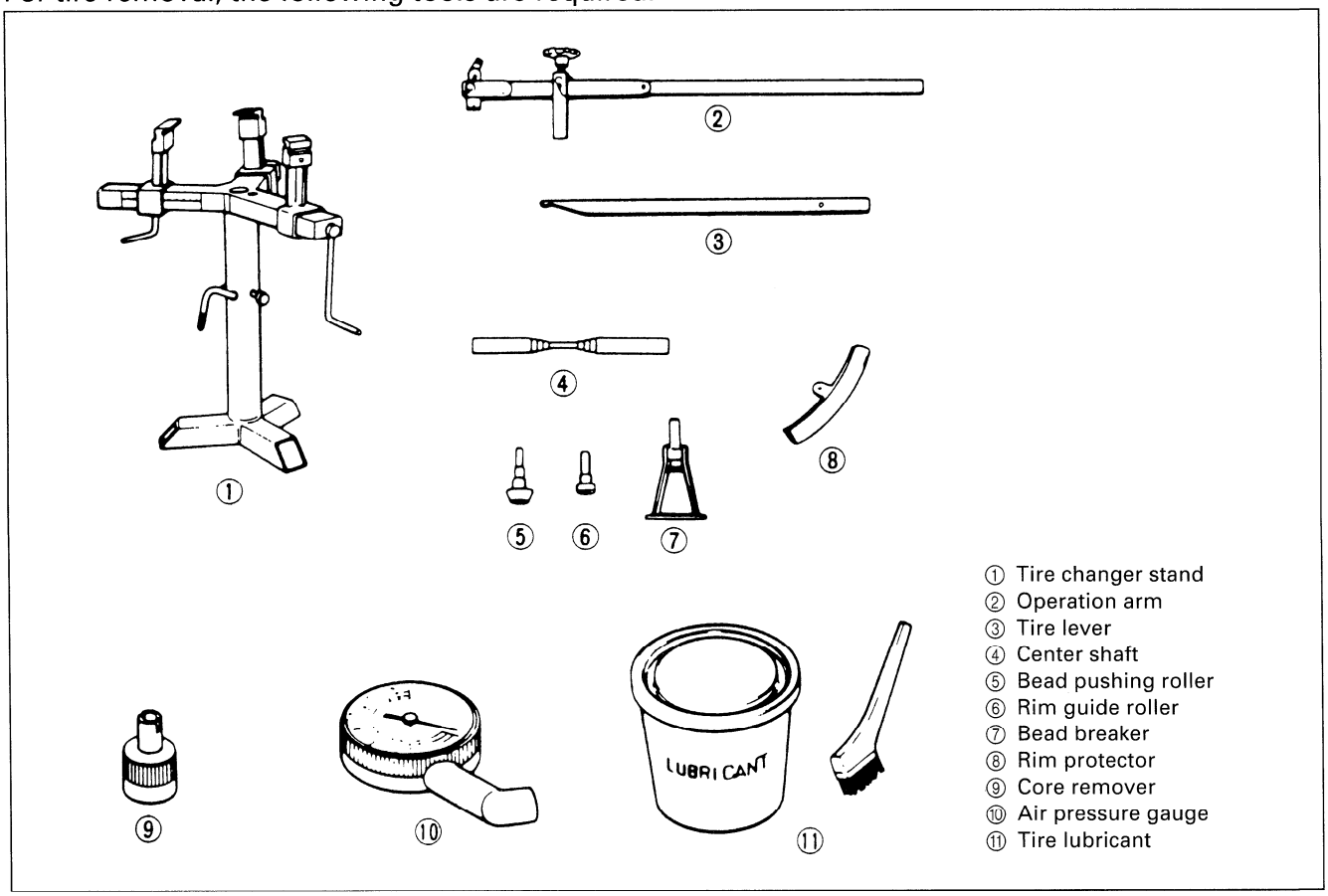
Bolt ①: 29 N•m (2.9 kg-m, 21.0 lb-ft)

Nut ②: 35 N•m (3.5 kg-m, 25.5 lb-ft)

TIRE AND WHEEL

TIRE REMOVAL

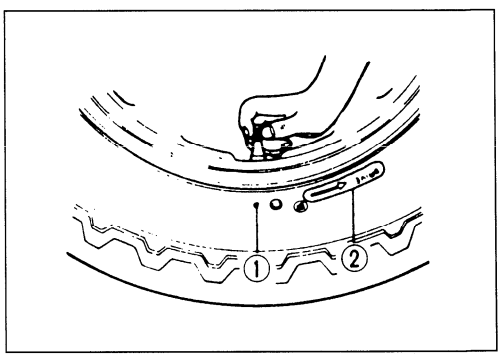
The most critical factor of a tubeless tire is the seal between the wheel rim and the tire bead. Because of this, we recommend using a tire changer which is also more efficient that tire levers.
For tire removal, the following tools are required.



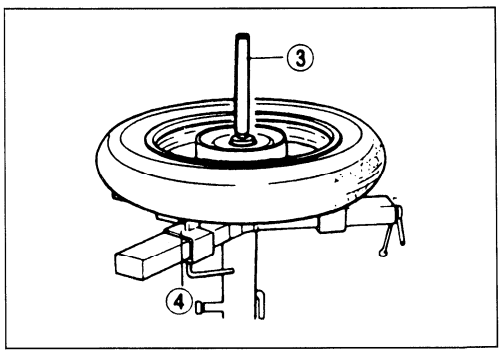
① Tire changer stand
② Operation arm
③ Tire lever
④ Center shaft
⑤ Bead pushing roller
⑥ Rim guide roller
⑦ Bead breaker
⑧ Rim protector
⑨ Core remover
⑩ Air pressure gauge
⑪ Tire lubricant

- Remove the valve core from the valve stem and deflate the tire completely.

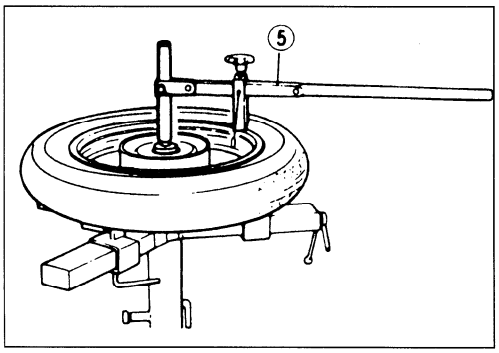
NOTE:
Mark the tire with chalk to note the position ① of the tire on the rim and rotational direction ② of the tire.



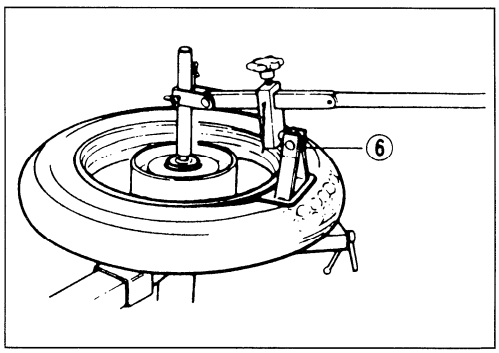
- Place the center shaft ③ to the wheel and fix the wheel with the rim holder ④.



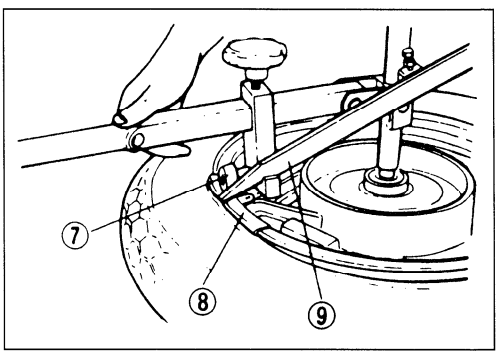
- Attach the operation arm ⑤ to the center shaft.



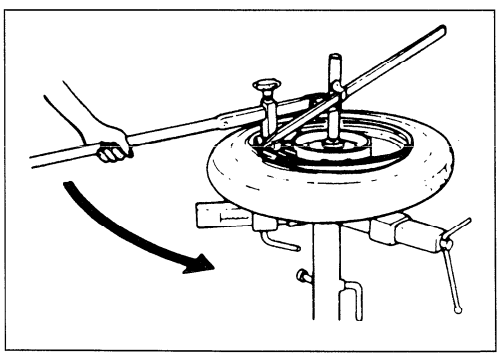
- Attach the bead breaker ⑥ to the operation arm and dismount the bead from the rim. Turn the wheel over and dismount the other bead from the rim.



- Install the rim guide roller ⑦.
- Install the rim protector ⑧ and raise the bead with the tire lever ⑨.

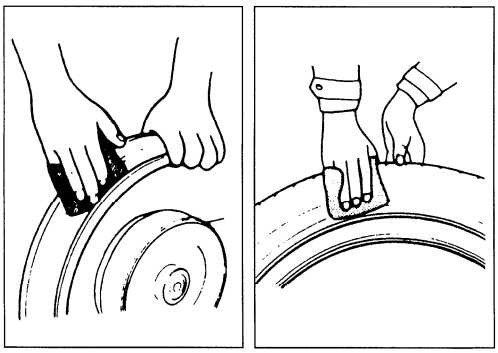


- Set the tire lever against the operation arm and rotate the lever around the rim. Repeat this procedure to remove the other bead from the rim.



INSPECTION

WHEEL



Wipe off any rubber substance or rust from the wheel and inspect the wheel rim. If any one of the following items is observed, replace the wheel.

* A distortion or crack.
* Any scratches or flaws in the bead seating area.
* Wheel runout (axial & radial) of more than 2.0 mm (0.08 in)

TIRE

Thoroughly inspect the removed tire and if any one of the following items is observed, do not repair the tire, replace it with a new one.

* A puncture or a split whose total length or diameter exceeds 6.0 mm (0.24 in).
* A scratch or split at the side wall.
* Tread depth less than 1.6 mm (0.06 in) in the tire.

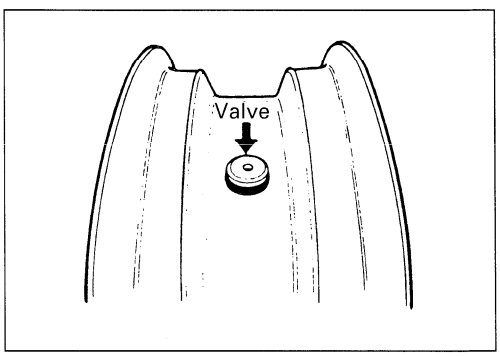
TOOL 09900-20805: Tire depth gauge

* Ply separation.
* Tread separation.
* Tread wear is extraordinarily deformed or distributed around the tire.
* Cord is cut.
* Damage from skidding (flat spots).
* Abnormality in the inner liner.

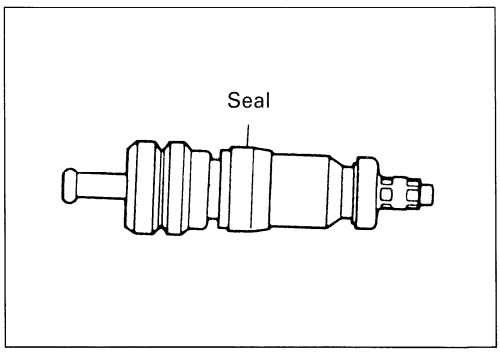
NOTE:
When repairing a flat tire, follow the repair instructions and use only recommended repair materials.

VALVE INSPECTION

Inspect the valve after the tire is removed from the rim and replace the valve with a new one if the seal rubber has any splits or scratches.



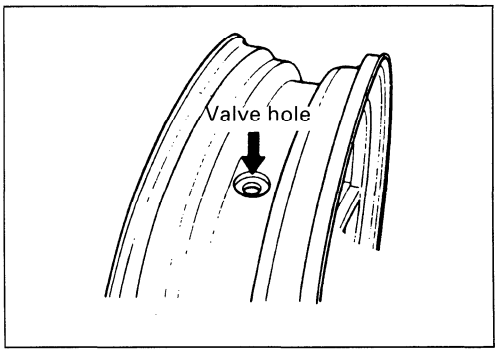
Inspect the removed valve core and replace it with the new one if the seals are abnormally deformed or worn.



VALVE INSTALLATION

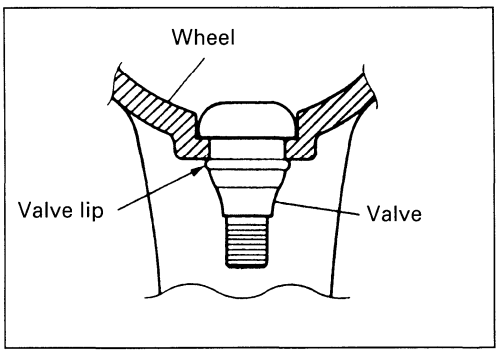
Any dust or rust around the valve hole must be cleaned off. Then, install the valve in the rim.

NOTE:
To properly install the valve into the valve hole, apply a special tire lubricant or neutral soapy liquid to the valve.



⚠ CAUTION

Be careful not to damage the lip of the valve.

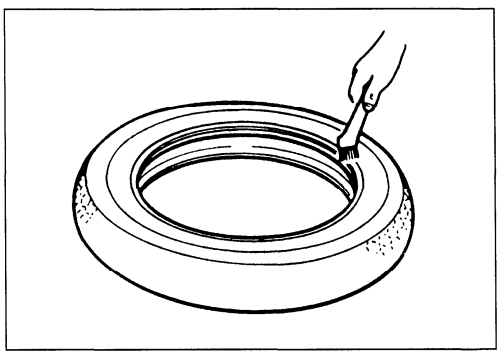


TIRE INSTALLATION

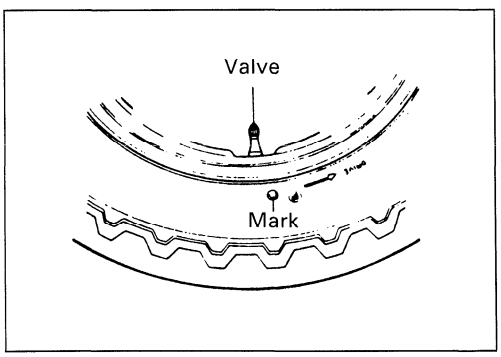
- Apply a special tire lubricant or neutral soapy liquid to the tire bead.

⚠ CAUTION

Never apply grease, oil or gasoline to the tire bead.

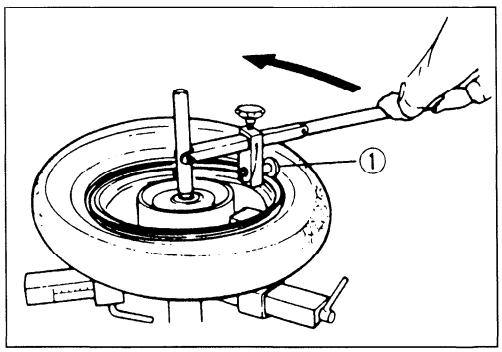


- When installing the tire, make sure that the directional arrow faces the direction of wheel rotation and align the balancing mark of the tire with the valve, as shown.

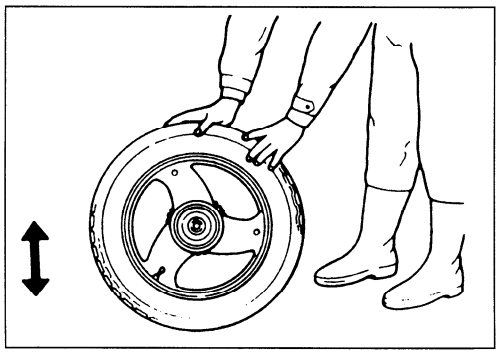


- Set the bead pushing roller ①.
- Rotate the operation arm around the rim to mount the bead completely. Mount the bottom bead first, then the upper bead.
- Remove the wheel from the tire changer and install the valve core in the valve stem.

NOTE:
Before installing the valve core, inspect it.

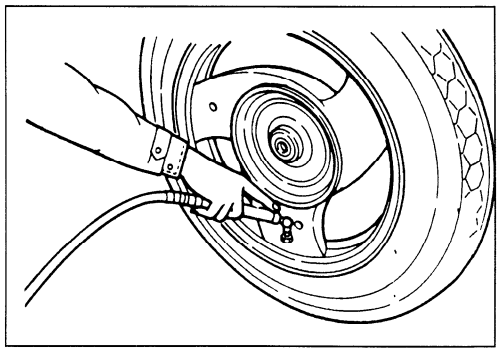


- Bounce the tire several times, while rotating it. This makes the tire bead expand outwards and thus makes inflation easier.



NOTE:
Before inflating the tire, confirm that the balance mark lines up with the valve stem.

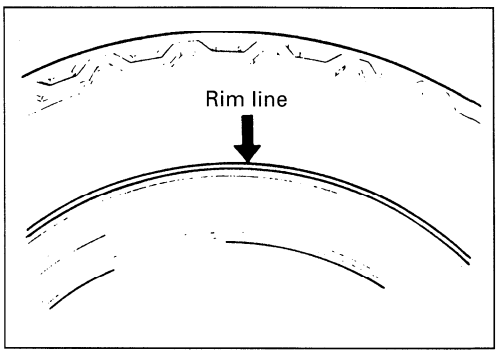
- Inflate the tire with air.



⚠ WARNING

Do not inflate the tire to more than 400 kPa (4.0 kg/cm^2, 56 psi). The tire could burst with sufficient force to cause severe injury. Never stand directly over the tire while inflating it.

NOTE:
Check the"rim line" cast on the tire side walls. It must be equidistant from the wheel rim all the way around. If the distance between the rim line and wheel rim varies, this indicates that the bead is not properly seated. If this is so, deflate the tire completely and unseat the bead for both sides. Coat the bead with lubricant and re-seat the tire.



- After the tire is properly seated in the wheel rim, adjust the air-pressure to the proper specification. Correct the wheel balance if necessary.

⚠ WARNING

Do not run a repaired tire more than 50 km/h (30 mph) within 24 hours after tire repair, since the patch may not be completely cured.

TIRE PRESSURE

Refer to page 2-12.

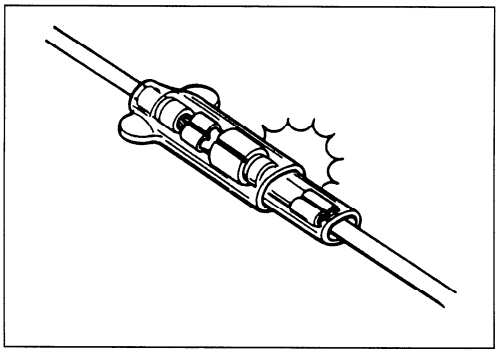
ELECTRICAL SYSTEM

CONTENTS

CAUTIONS IN SERVICING

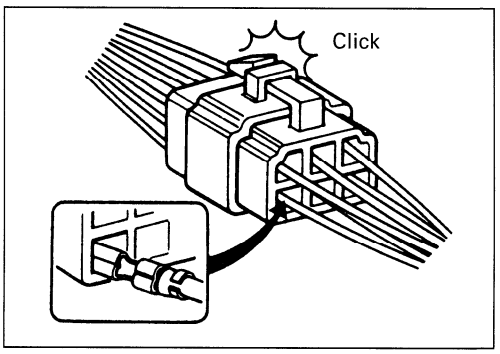
CONNECTOR

- When disconnecting a connector, be sure to hold the terminals; do not pull the lead wires.
- When connecting a connector, push it in so it is firmly attached.
- Inspect the connector for corrosion, contamination and any breakage in the cover.



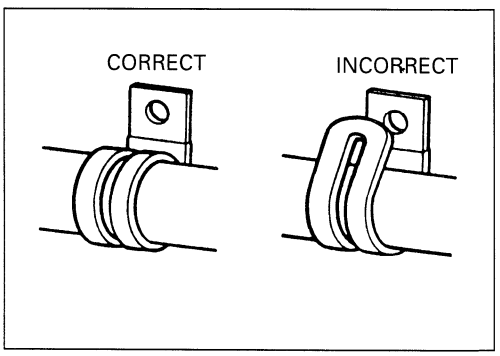
COUPLER

- With a lock-type coupler, be sure to release the lock before disconnecting it. When connecting a coupler, push it in until the lock clicks shut.
- When disconnecting a coupler, be sure to hold the coupler; do not pull the lead wires.
- Inspect each terminal on the coupler for looseness or bends.
- Inspect each terminal for corrosion and contamination.



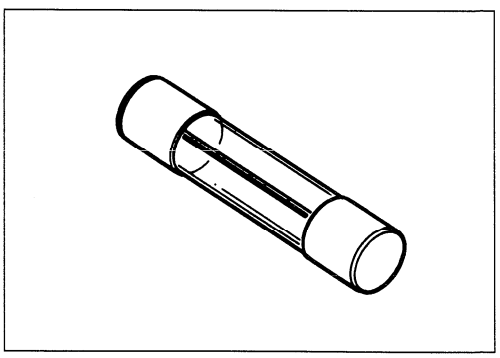
CLAMP

- Refer to "WIRE, CABLE AND HOSE ROUTING" (Refer to page 8-12.) for proper clamping procedures.
- Bend the clamp properly, as shown in the illustration.
- When clamping the wire harness, do not allow it to hang down.
- Do not use wire or any other substitute for the band-type clamp.



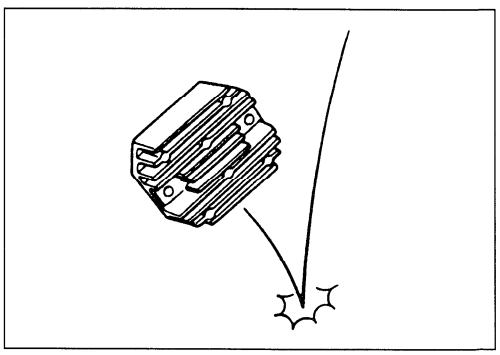
FUSE

- When a fuse blows, always investigate the cause, correct the problem and then replace the fuse.
- Do not use a fuse of a different capacity.
- Do not use any substitutes for the fuse (e.g., wire, etc.).



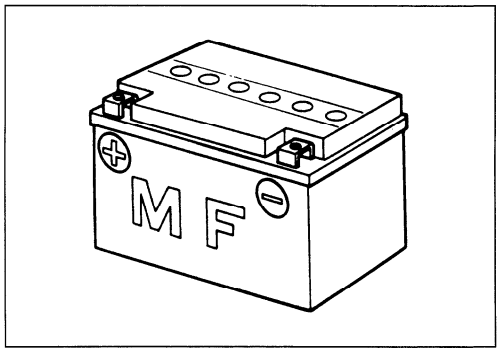
SEMI-CONDUCTOR EQUIPPED PART

- Do not drop any part that contains a semi-conductor (e.g., CDI/ignition coil, regulator/rectifier, etc.).
- When inspecting the part, follow the inspection instructions carefully. Neglecting proper procedures may cause this part to be damaged.



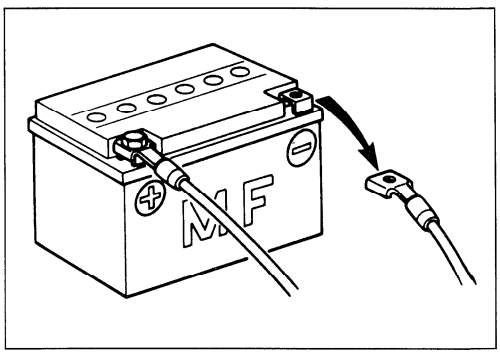
BATTERY

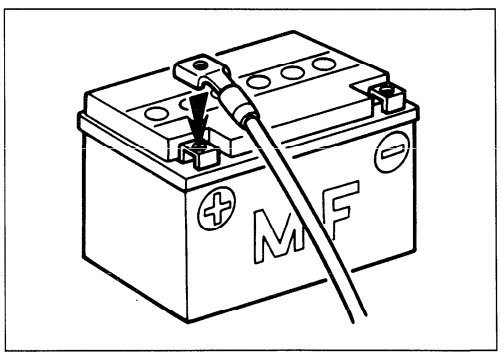
(Except for P-53)



- The MF battery used in this motorcycle does not require maintenance (e.g., electrolyte level inspection, distilled water replenishing, etc.)
- During normal charging, no hydrogen gas is produced. However, if the battery is overcharged, hydrogen gas may be produced. Therefore, be sure that there are no fire or spark sources nearby (e.g., short-circuit, etc.) when charging the battery.
- Be sure to recharge the battery in a well-ventilated and open area.
- Note that the charging system for the MF battery is different from that of a conventional battery. Do not replace the MF battery with a conventional battery.

CONNECTING THE BATTERY





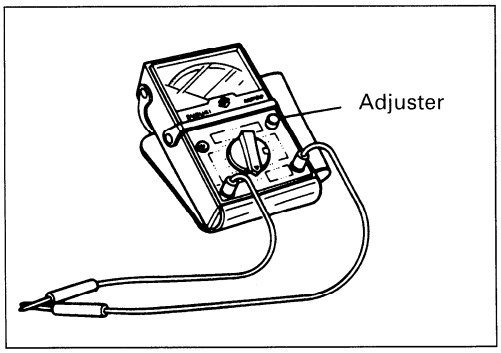
- When disconnecting terminals from the battery for disassembly or servicing, be sure to disconnect the battery (⊖) lead wire, first.
- When connecting the battery lead wires, be sure to connect the battery (⊕) lead wire, first.
- If the terminal is corroded, remove the battery, pour warm water over it and clean it with a wire brush.
- After connecting the battery, apply a light coat of grease to the battery terminals.
- Reinstall the cover over the battery (⊕) terminal.

WIRING PROCEDURE

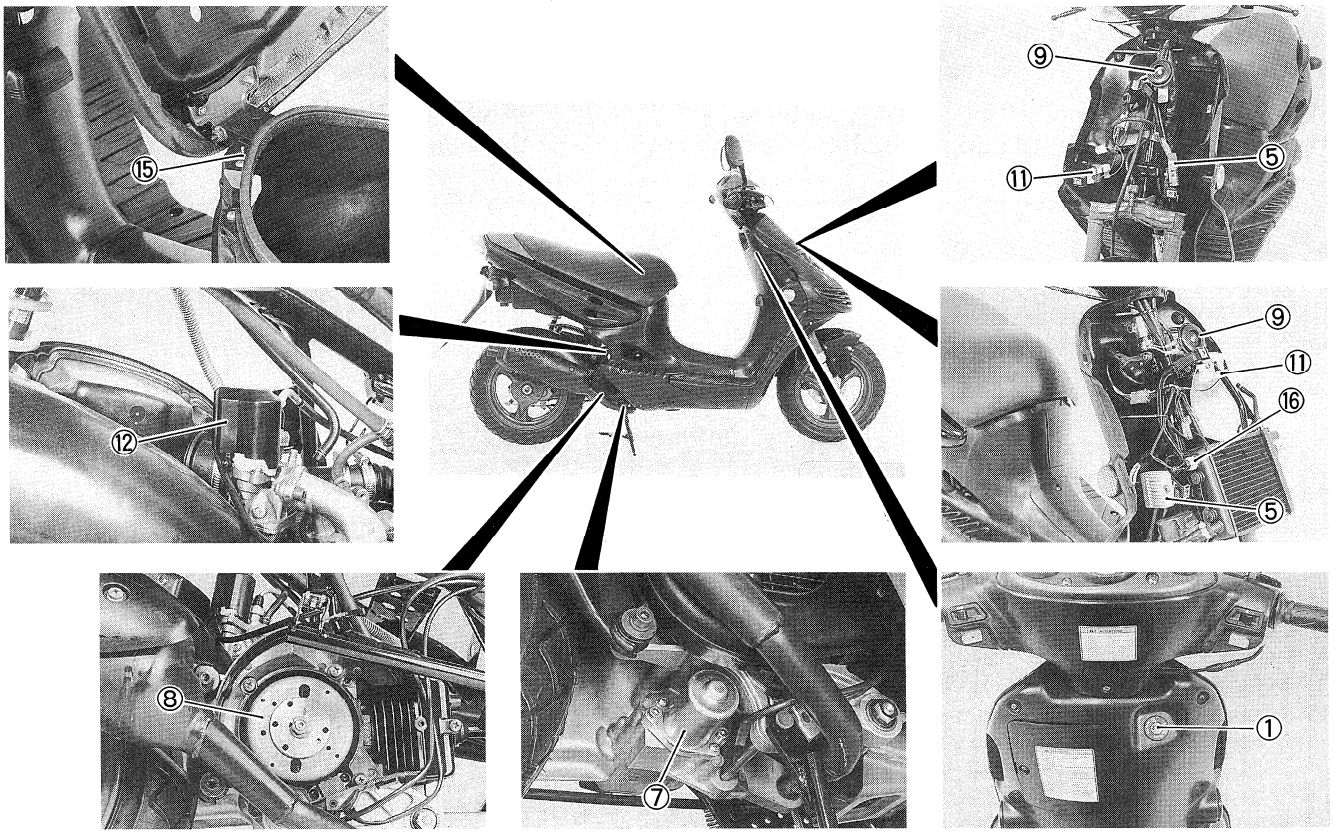
- Properly route the wire harness according to "WIRE, CABLE AND HOSE ROUTING" (Refer to page 8-12).

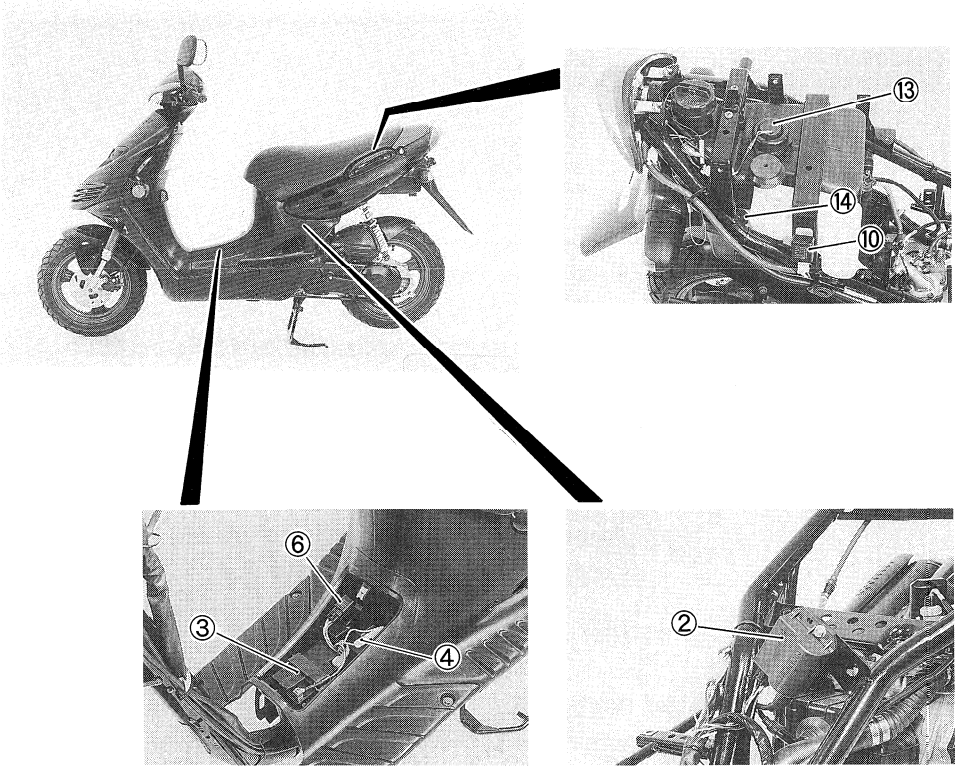
USING THE POCKET TESTER

- Properly use the pocket tester (⊕) and (⊖) probes. Improper use can cause damage to the motorcycle and tester.
- If the voltage and current values are not known, begin measuring in the highest range.
- After changing the resistance range, perform the 0 Ω adjustment. This should be done before measuring.
- When measuring the resistance, make sure that no voltage is applied. If voltage is applied, the tester will be damaged.
- After using the tester, turn the switch to the OFF position.



LOCATION OF ELECTRICAL COMPONENTS

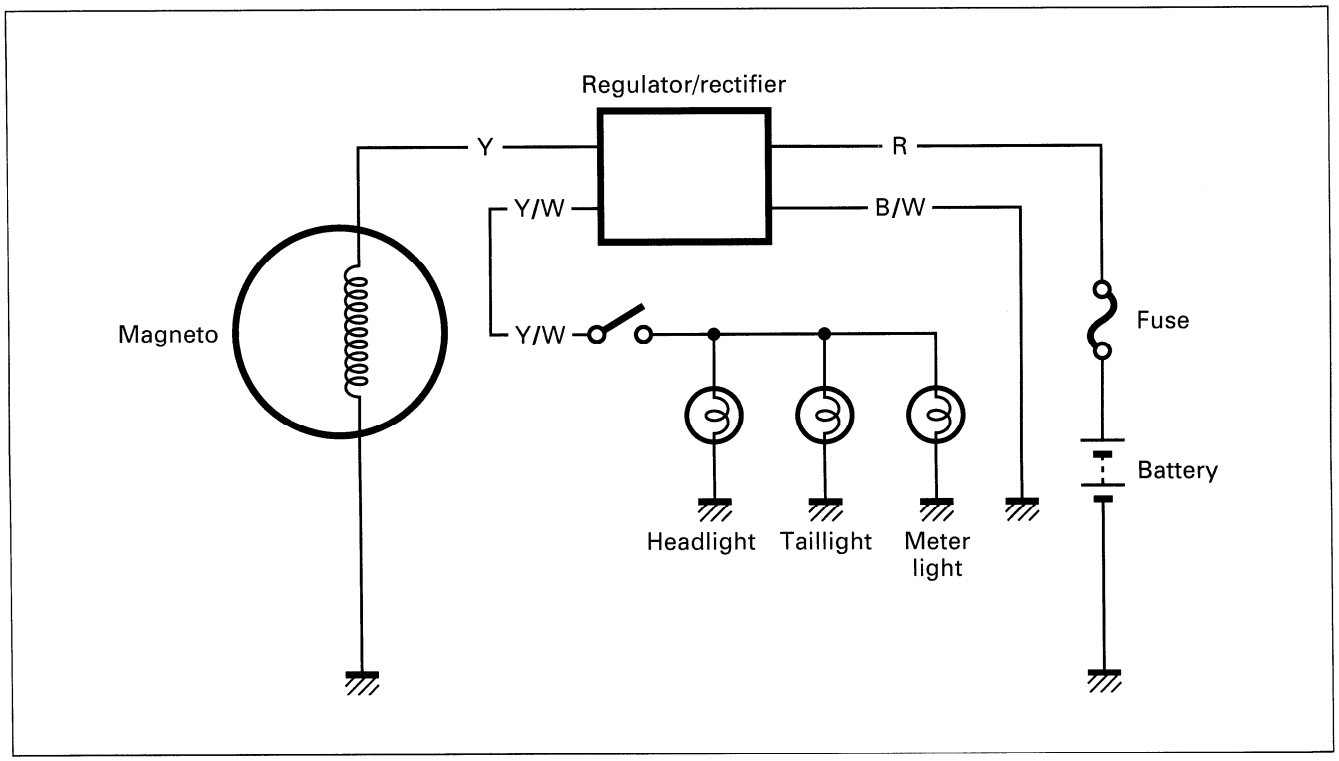




① Ignition switch
② CDI/ignition coil
③ Battery
④ Fuse
⑤ Regulator/rectifier
⑥ Starter relay
⑦ Starter motor
⑧ Magneto
⑨ Horn
⑩ Turn signal relay
⑪ Resistor
⑫ Thermoelement
⑬ Fuel level gauge
⑭ Oil level indicator switch
⑮ Trunk light switch
⑯ Engine coolant temp. switch

CHARGING AND LIGHTING SYSTEM

The charging system for this motorcycle uses a flywheel magneto, as shown below. The charging and lighting coils are mounted on the magneto stator and generate AC current as the magneto rotor turns. The AC current, which is generated in the charging coil, flows to the regulator/rectifier where it is changed to DC current. This DC current then charges the battery and the lighting coil uses the regulated AC current to supply the headlight, taillight, and meter light.



TROUBLE SHOOTING

Battery discharges quickly.

Check accessories which use excessive amounts of electricity.

- Accessories are installed. → •Remove accessories

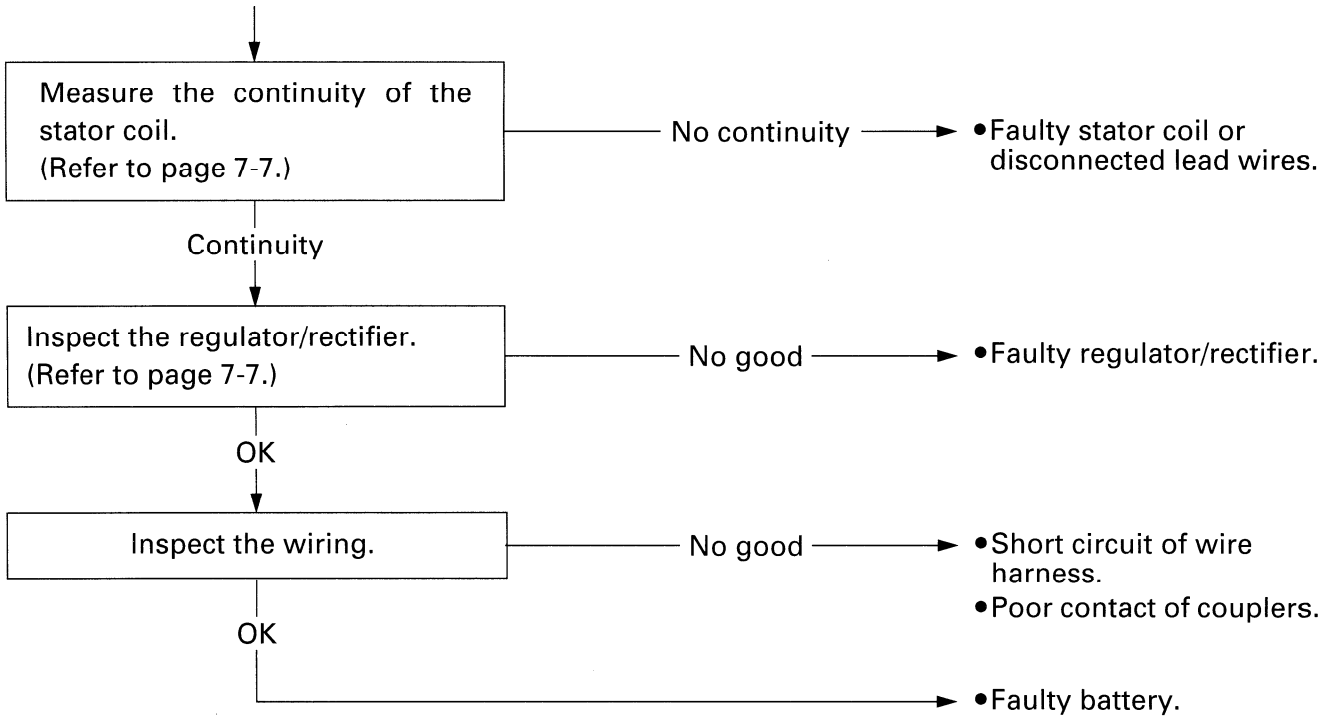
No accessories

Measure the charging voltage between the battery terminals (Refer to page 7-6.)

- Correct → •Faulty battery
  •Abnormal driving condition

Incorrect

Continued next page



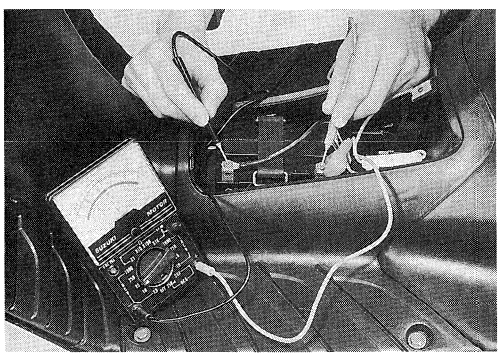
Others

Battery overcharge	• Faulty regulator/rectifier • Faulty battery • Poor contact of regulator/rectifier coupler

INSPECTION

CHARGING OUTPUT CHECK

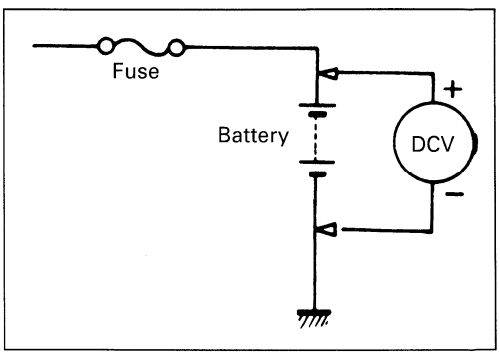
Start the engine and keep it running at 5 000 r/min with the lighting switch turned on.
Measure the DC voltage between the battery (⊕) and (⊖) terminals with a pocket tester.
If the tester reads under 13.5 V or over 15.5 V, check the continuity of the magneto stator coil or replace the regulator/rectifier.



NOTE:
When making this test, be sure that the battery is fully-charged.

09900-25002: Pocket tester
09900-26006: Tachometer

STD charging output: 13.5–15.5 V at 5000 r/min.

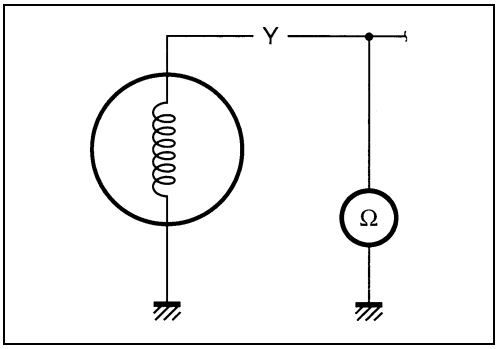


STATOR COIL

Measure the resistance between the lead wire and ground using a pocket tester.
If the resistance is incorrect, replace the stator coil.

09900-25002: Pocket tester

Tester knob indication: × 1 Ω range



	Standard resistance
Y-Ground	0.1 – 1.2 Ω

REGULATOR/RECTIFIER

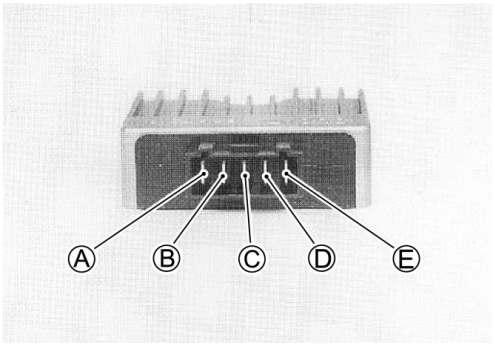
Measure the voltage between the terminals with the multi circuit tester.

09900-25008: Multi circuit tester set

Tester knob indication: Diode test (⊣◀)

Unit: V

⊖ Tester prove / ⊕ Tester prove	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
Ⓐ		0	✻	1.3 – 1.6	1.3 – 1.6
Ⓑ	0		✻	1.3 – 1.6	1.3 – 1.6
Ⓒ	0.8 – 1.2	0.8 – 1.2		0.4 – 1.1	0.6 – 1.1
Ⓓ	0.8 – 1.2	0.8 – 1.2	✻		0.2 – 0.5
Ⓔ	0.9 – 1.3	0.9 – 1.3	✻	0.2 – 0.5	



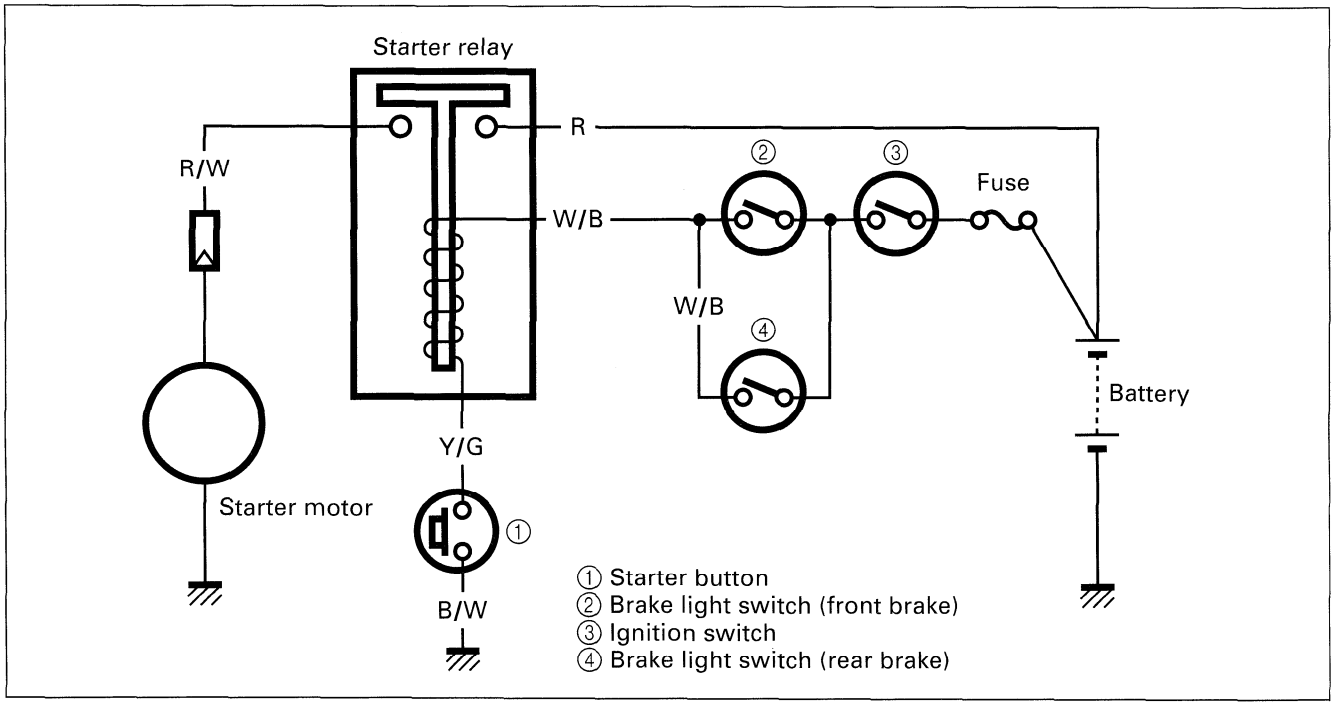
✻ More than 1.4 V (tester's battery voltage)

NOTE:
If the tester reads under 1.4 V disconnect the tester probes from the wire leads, and then replace the multi circuit tester's battery.

STARTER SYSTEM

DESCRIPTION

The starter system consists of the following components: the starter motor, starter relay, starter button, brake light switches (front and rear brakes), ignition switch and battery. Pressing the starter button, while squeezing the front or rear brake lever, energizes the starter relay, causing the contact points to close, completing the circuit from the starter motor to the battery.



TROUBLE SHOOTING

Starter motor will not run.

Turn on the ignition switch.
Listen for a click from the starter relay when the starter button is pushed.
Grasp the front or rear brake lever when pushing the starter button.

Clicks →

Check if the starter motor runs when its terminal is connected to the battery ⊕ terminal.
(Do not use a thin wire because a large amount of current flows.)

No click →

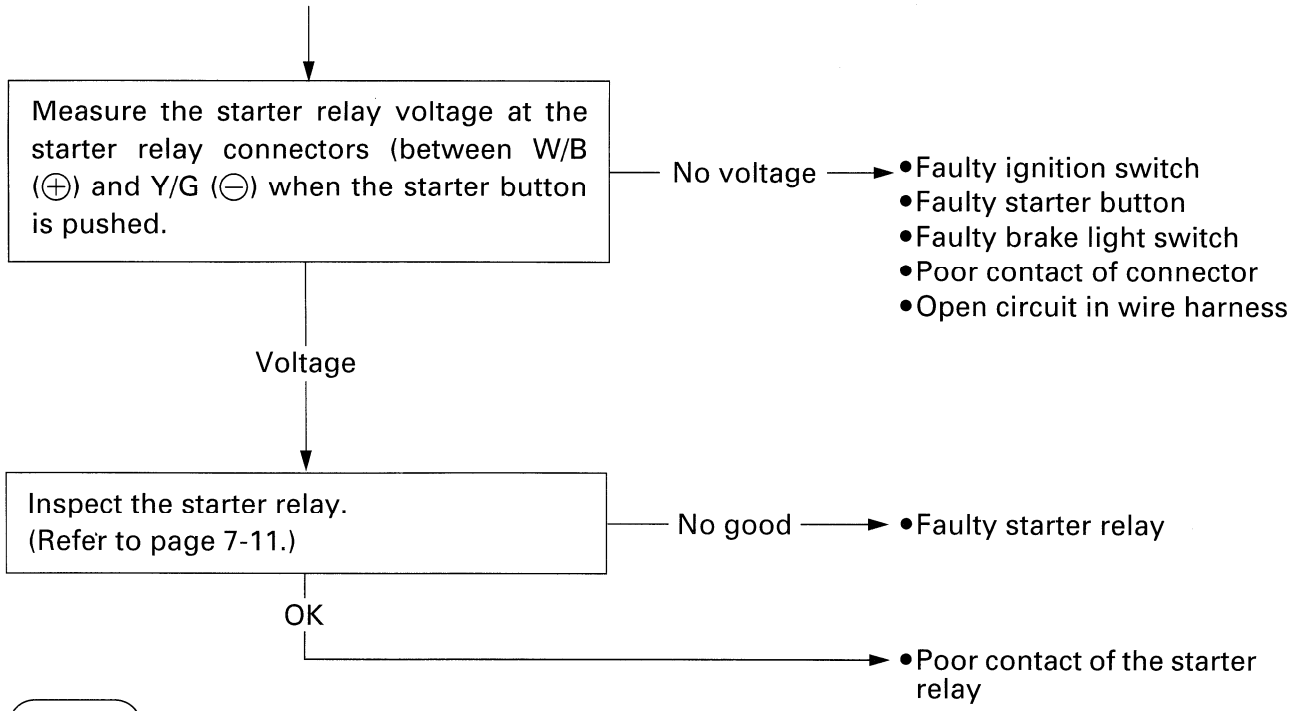
Continued next page

Runs →

- Faulty starter relay
- Loosen or disconnected starter motor lead wire

Does not run →

- Faulty starter motor



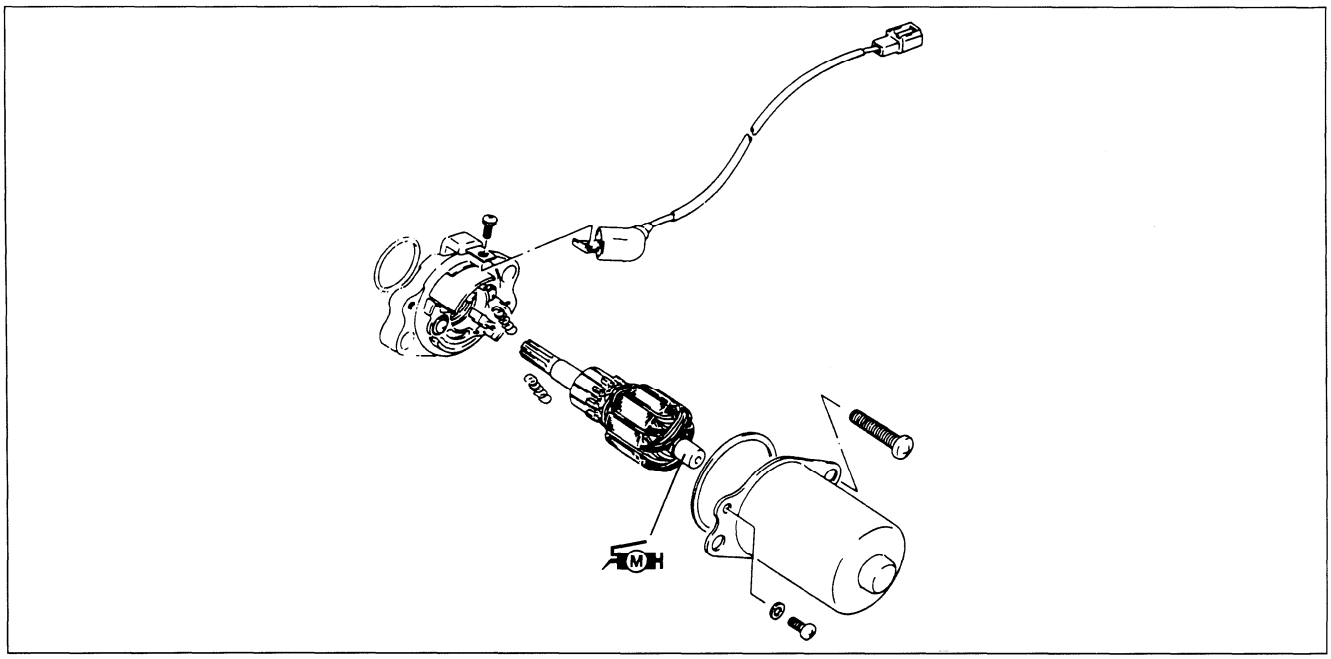
Others

Engine does not turn though starter motor runs.	•Faulty starter pinion gear assembly

STARTER MOTOR REMOVAL AND DISASSEMBLY

- Disconnect the starter motor lead wire and remove the starter motor by removing the mounting bolts. (Refer to page 3-9.)

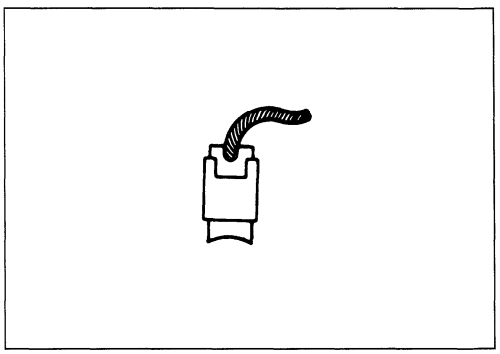
- Disassemble the starter motor, as shown in the illustration



STARTER MOTOR INSPECTION

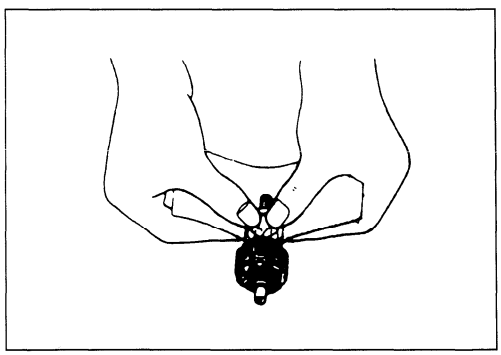
CARBON BRUSH

Inspect the brushes for damage or wear. If any damage is found, replace the brushes.



COMMUTATOR

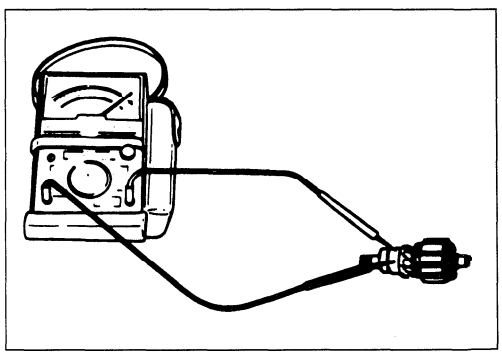
If the commutator surface is dirty, starting performance will decrease. If the commutator is abnormally worn, replace the armature. When the surface is discolored, polish it with #400 sand paper and clean it with a dry cloth.



ARMATURE COIL

Measure the continuity between each segment.
Measure the continuity between each segment and the armature shaft.
If there is no continuity between the segments or there is continuity between the segments and shaft, replace the armature with a new one.

TOOL 09900-25002: Pocket tester

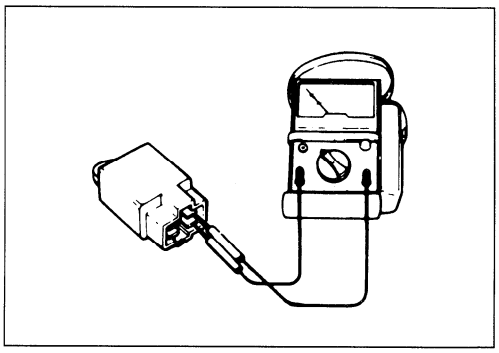


STARTER RELAY INSPECTION

Disconnect the starter motor lead wire (R/W).
Turn on the ignition switch and squeeze the front or rear brake lever and push the starter button. Measure the continuity between the Red and Red/White lead wires at the starter relay.
If there is continuity, the starter relay is ok.

09900-25002: Pocket tester

Check the starter relay coil for opens, grounds and the specified resistance.
If the resistance is out of specification, replace the starter relay.



09900-25002: Pocket tester

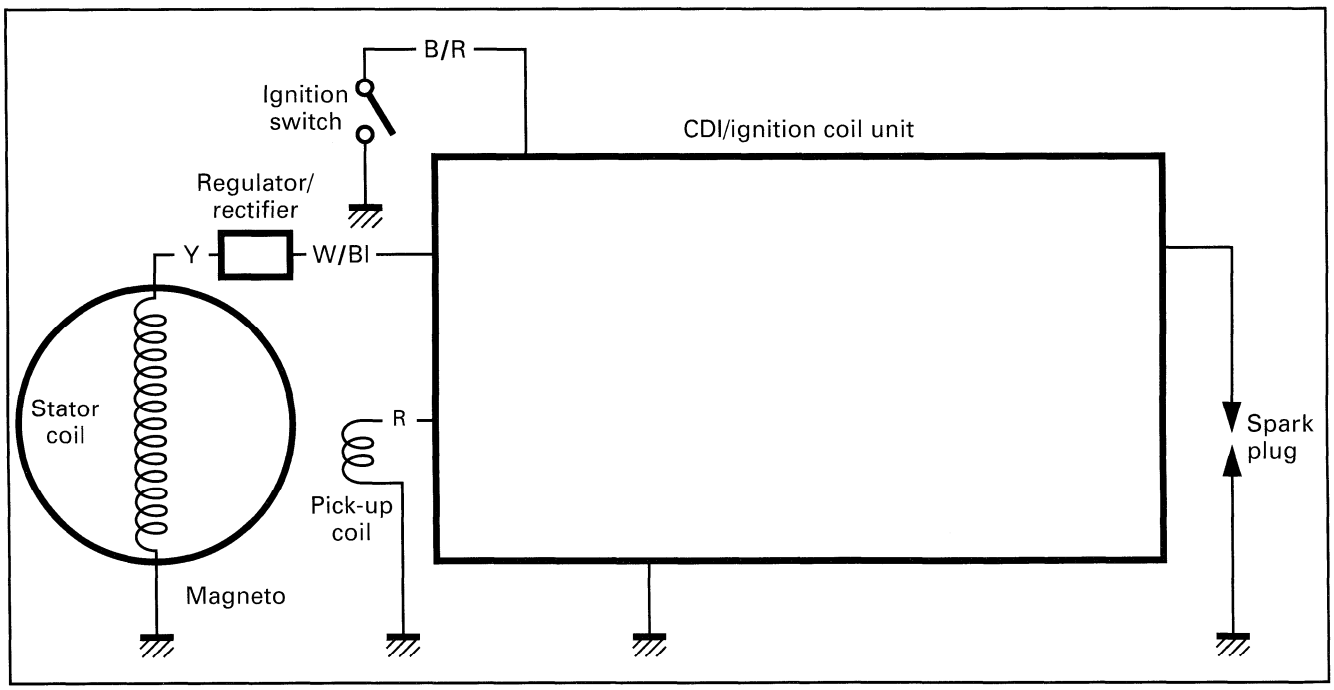
Tester knob indication: × 10 Ω range

STD resistance: 50 – 90 Ω

IGNITION SYSTEM

DESCRIPTION

In the capacitor discharged ignition system, the electrical energy generated by the magneto charges the capacitor. This energy is released in a single surge at the specified ignition timing point and the current flows through the primary side of the ignition coil. A high voltage current is induced in the secondary windings of the ignition coil, resulting in a strong spark between the spark plug gap.



TROUBLE SHOOTING

No spark or poor spark

Check the CDI/ignition coil unit for a poor connection.
- Looseness → • Poor connection of the lead wire.

Correct

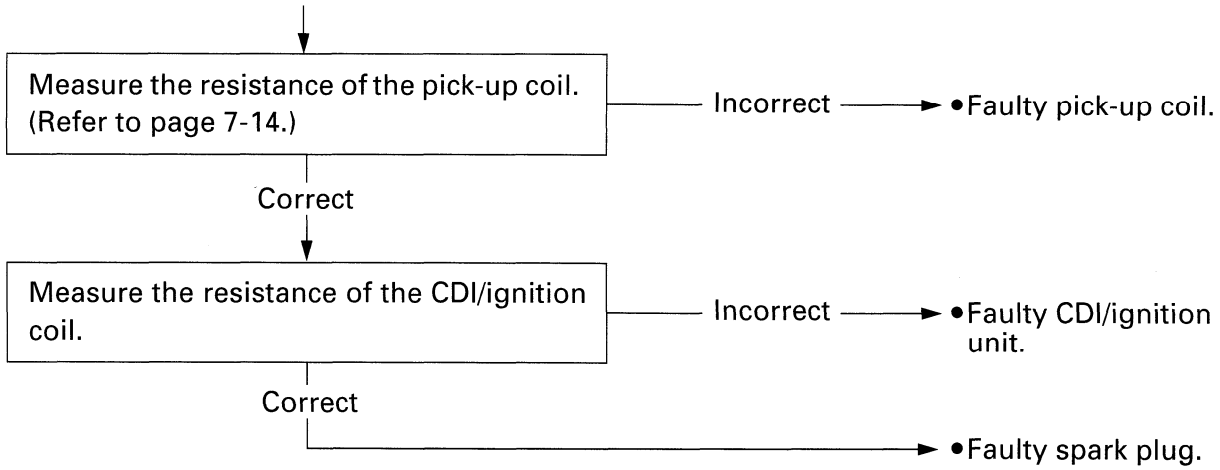
Measure the continuity of the stator coil (Refer to page 7-7).
- No continuity → • Faulty stator coil.

Continuity

Inspect the regulator/rectifier. (Refer to page 7-7).
- No good → • Faulty regulator/rectifier.

OK

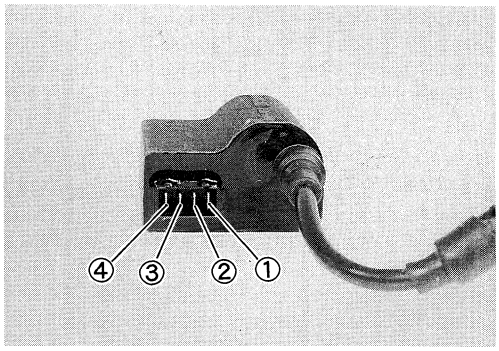
Continued next page.



CDI/IGNITION COIL INSPECTION

CHECKING WITH THE SUZUKI POCKET TESTER

- Remove the CDI/ignition coil.
- Using the pocket tester (× 1 kΩ range), measure the resistance between the terminals, as shown in the following table. If the resistance is incorrect, replace the CDI/ignition coil.



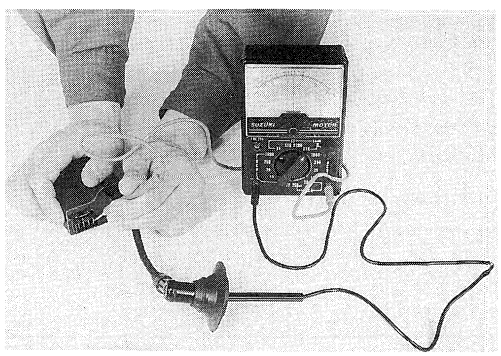
TOOL 09900-25002: Pocket tester

Tester knob indication: × 1 kΩ range

Unit: kΩ

⊖ Probe of tester to:	⊕ Probe of tester to: ①	②	③	④
①		0.1–1.5	2–10	10–30
②	0.1–1.5		2–10	10–30
③	∞	∞		∞
④	20–50	20–50	10–40	

- Use a pocket tester that has a "× 1kΩ" range.
  Inspect the resistance between the spark plug cap and ground terminal of the ignition coil.



TOOL 09900-25002: Pocket tester

Tester knob indication: × 1 kΩ range

Ignition coil secondary

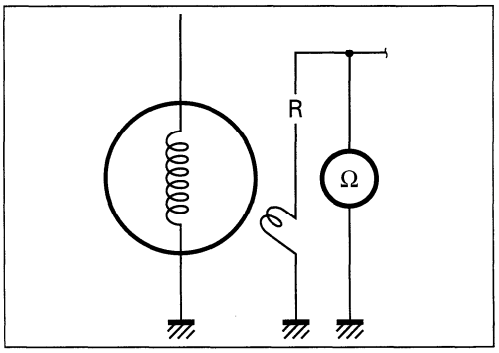
resistance: 4 – 10 kΩ (Spark plug cap-Terminal of B/W lead wire)

⚠ CAUTION

The diode, condenser and SCR are located in the primary circuit, therefore, the primary circuit cannot be checked with an ohmmeter.

PICK-UP COIL

- Remove the right frame cover and side leg shield. (Refer to page 6-3.)
- Disconnect the pick-up coil lead wire (Red).
- Using a pocket tester, measure the resistance between the Red lead wire and ground.
  If the resistance is incorrect, replace the pick-up coil.



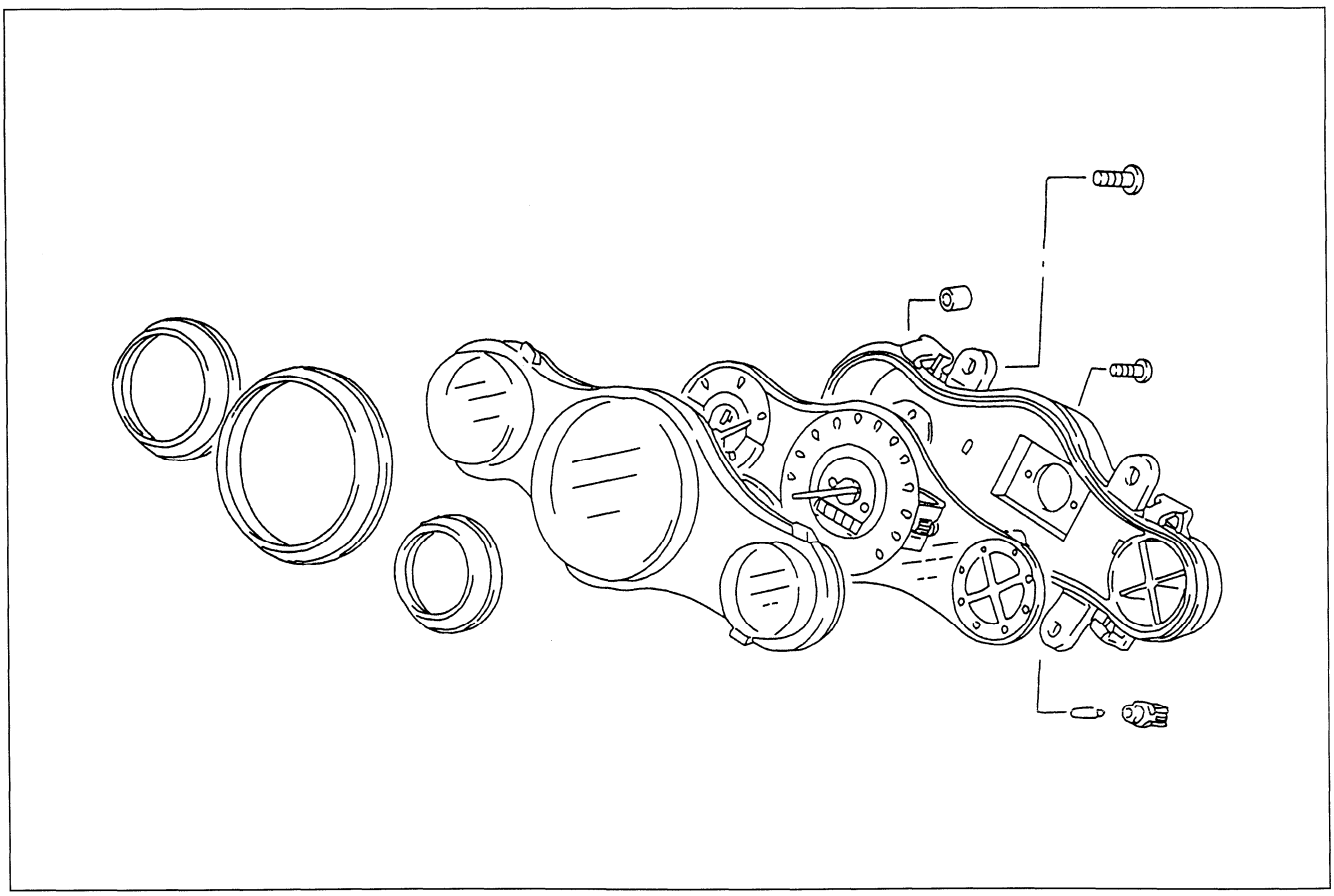
TOOL 09900-25002: Pocket tester

Tester knob indication: × 100 Ω range

Pick-up coil resistance: 100 – 270 Ω (Red - Ground)

SPEEDOMETER

Disassemble the speedometer, as shown in the illustration.

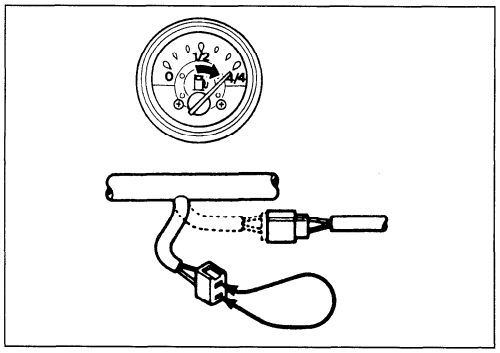


INSPECTION

Using a pocket tester, measure the continuity of the speedometer bulbs.
If the continuity is incorrect, replace the speedometer bulbs.

TOOL 09900-25002: Pocket tester

FUEL METER AND GAUGE



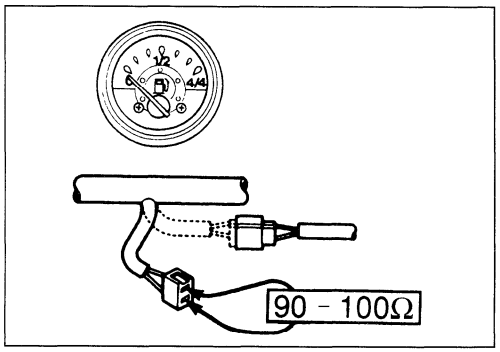
FUEL METER INSPECTION

To test the fuel meter, perform the following tests.

Test 1

This test will determine if the fuel meter is operating.

- Remove the frame cover (R) and side leg shield (R). (Refer to page 6-3.)
- Disconnect the fuel gauge sending unit coupler (B/W - Y/B).
- Connect a jumper wire between the B/W and Y/B lead wires coming from the wire harness.
- Turn the ignition switch on.
- The fuel meter should indicate "4/4" (full).

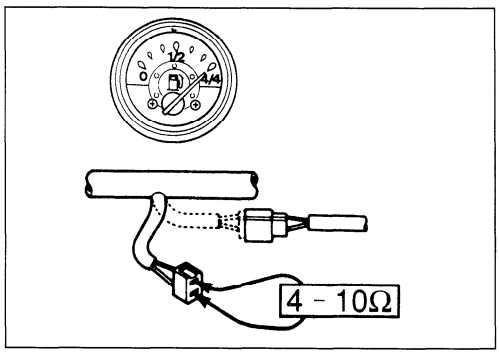


Test 2

This test will determine the accuracy of the fuel meter in the "0" (empty) and "4/4" (full) positions.

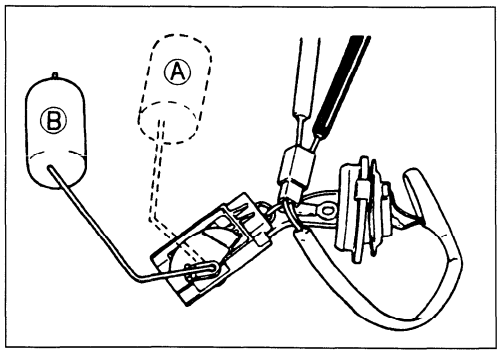
- Connect a 90–100-ohm resistor between the Y/B and B/W lead wires.
- The fuel meter is operating correctly if the needle moves to "0" (empty) when the ignition switch is turned on.
- Replace the 90–100-ohm resistor with a 4–10-ohm resistor.
- The fuel meter is operating correctly if the needle moves to "4/4" (full) when the ignition switch is turned on.

If either test detects a malfunctioning fuel meter, replace it.



FUEL LEVEL GAUGE INSPECTION

- Disconnect the lead wires coming out of the fuel level gauge and measure the resistance at each fuel level gauge float position.
- If the resistance is incorrect, replace the fuel level gauge with a new one.
- The relation between the position of the fuel level gauge float and the resistance, is shown in the following table.

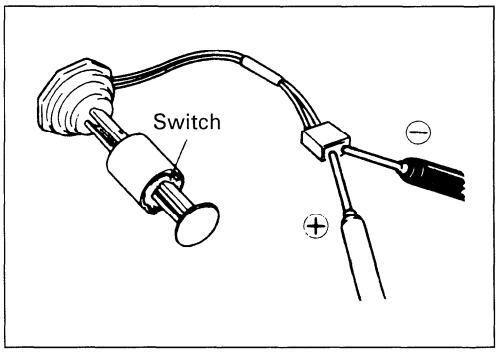


Float position	Resistance
Ⓐ "4/4" (Full)	4–10 Ω
Ⓑ "0" (Empty)	90–100 Ω

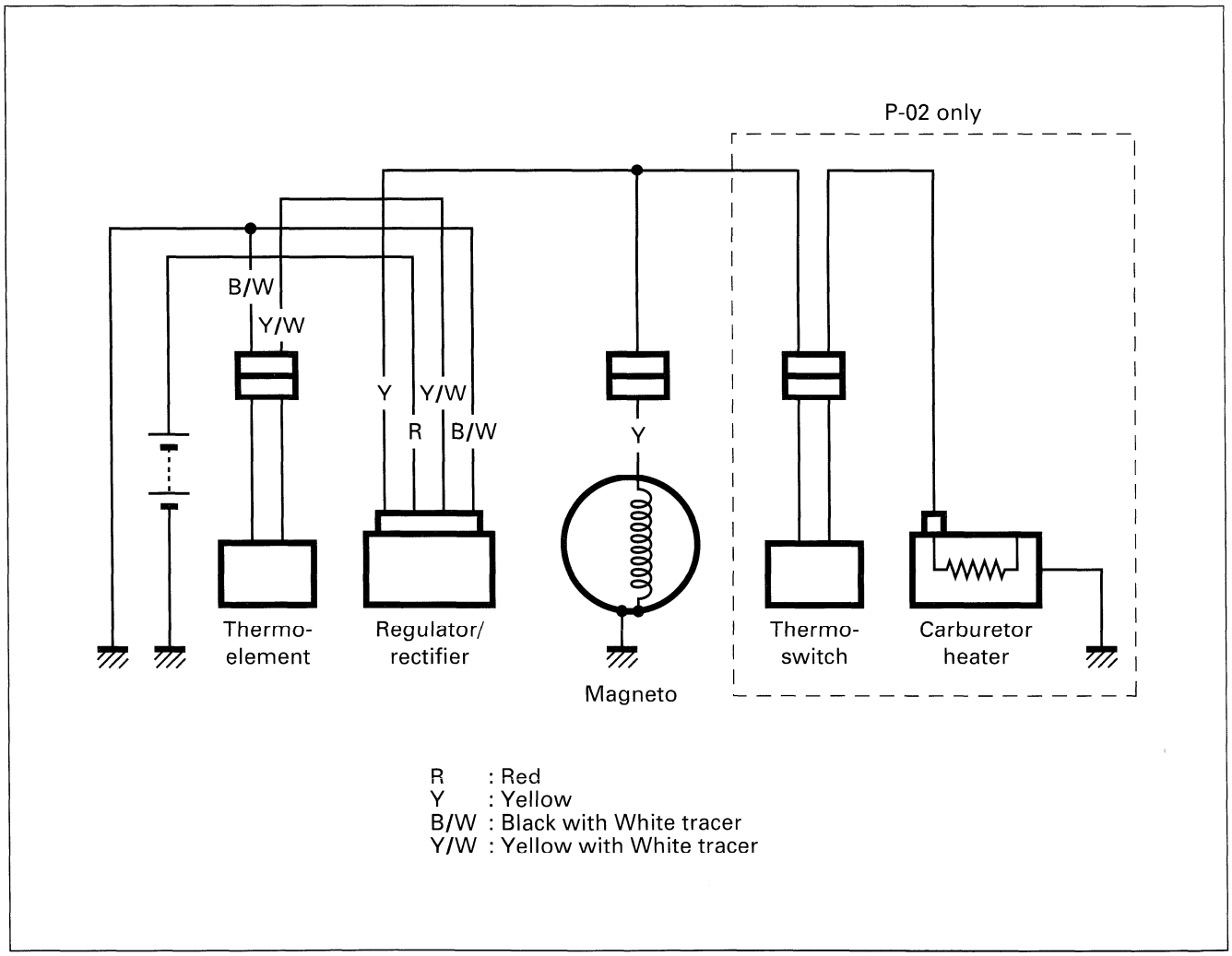
OIL LEVEL INDICATOR SWITCH

Measure the oil level indicator switch for continuity between the lead wires.
If the pocket tester does not indicate a value of 0-1 Ω when the switch is in the bottom position, file the contact surface or replace the oil level indicator switch.

TOOL 09900-25002: Pocket tester



THERMOELEMENT AND CARBURETOR HEATER

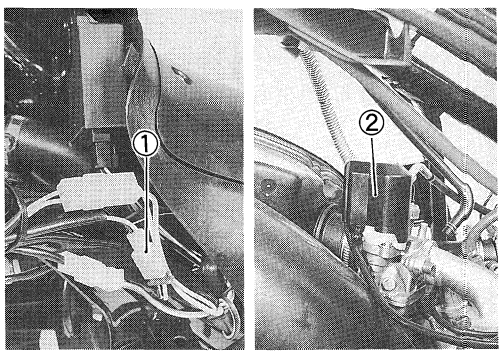


R : Red
Y : Yellow
B/W : Black with White tracer
Y/W : Yellow with White tracer

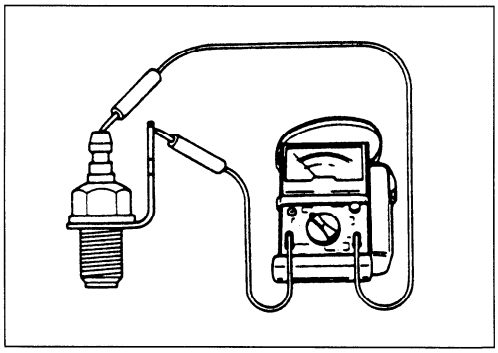
INSPECTION

- Disconnect the thermoelement coupler ①.
- Connect the thermoelement ② coupler to a 12V battery.
- Wait five minutes and feel the thermoelement.
- The thermoelement should be approximately 36°C.
- If the appropriate temperature is not reached, replace the thermoelement.

NOTE:
This check should be carried out when the carburetor is cold.



CARBURETOR HEATER INSPECTION (P-02 only)



- Disconnect the carburetor heater lead wires.

Measure the resistance between the terminals.

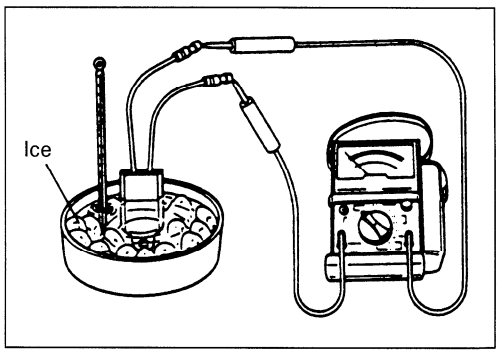
09900-25002: Pocket tester

Tester knob indication: × 1Ω range

Standard resistance: 8 – 18 Ω

NOTE:
This check should be carried out when the engine is cold.

CARBURETOR THERMO-SWITCH INSPECTION (P-02 only)



- Disconnect the carburetor thermo-switch.

The temperature at which the thermo-switch closes, must be within the proper specification. Measure the thermo-switch's closing temperature, as follows.
Connect the thermo-switch to a pocket tester and place it in a container of water. Cool the water with ice and observe the temperature when the switch closes.

09900-25002: Pocket tester

Tester knob indication: × 1Ω range

Thermo-switch specification

OFF → ON: Below 3 – 9°C
ON → OFF: Above 10 – 16°C

SWITCHES

Measure the continuity of each switch with the pocket tester. If any abnormality is found, replace the respective switch assemblies with new ones.

09900-25002: Pocket tester

Tester knob indication: × 1Ω range

IGNITION SWITCH

For P-02

Position \ Color	B/R	B/W	Bl/W	O	R	Gr	Br
P	○	○			○		○
Lock (🔒)	○	○					
OFF (⊗)	○	○					
C (⊙)	○	○	○	○	○		
ON (↻)				○	○	○	○

For the other models

Position \ Color	B/R	B/W	Bl/W	O	R
Lock (🔒)	○	○			
OFF (⊗)	○	○			
C (⊙)	○	○	○	○	○
ON (↻)				○	○

LIGHTING SWITCH

Position \ Color	G/W	Gr	Y/W
OFF (●)	○		○
ON (☼)		○	○

TEMPERATURE SWITCH (For AY50W)

Position \ Color	B/G	B/W
ON	○	○
OFF		

TURN SIGNAL LIGHT SWITCH

Position \ Color	B	Lbl	Lg
L (⇦)	○	○	
PUSH			
R (⇨)		○	○

STARTER BUTTON

Position \ Color	B/W	Y/G
OFF		
ON (PUSH)	○	○

HORN BUTTON

Position \ Color	G	B/W
OFF		
ON (PUSH)	○	○

FRONT BRAKE LIGHT SWITCH

Position \ Color	O	W/B
OFF		
ON	○	○

REAR BRAKE LIGHT SWITCH

Position \ Color	O	W/B
OFF		
ON	○	○

OIL LEVEL SWITCH

Position \ Color	Bl/W	B/W
OFF		
ON	○	○

TRUNK LIGHT SWITCH

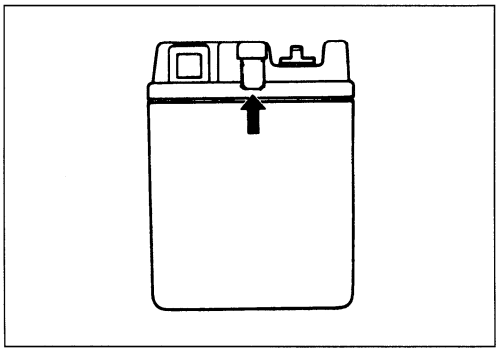
Position \ Color	R	B/W
OFF (Push)		
ON	○	○

WIRE COLOR

B	: Black	Lbl	: Light blue
Br	: Brown	Lg	: Light green
G	: Green	O	: Orange
Gr	: Gray	R	: Red

B/G : Black with Green tracer
B/R : Black with Red tracer
B/W : Black with White tracer
Bl/W : Blue with White tracer
G/W : Green with White tracer
W/B : White with Black tracer
Y/G : Yellow with Green tracer
Y/W : Yellow with White tracer

BATTERY (For P-53)

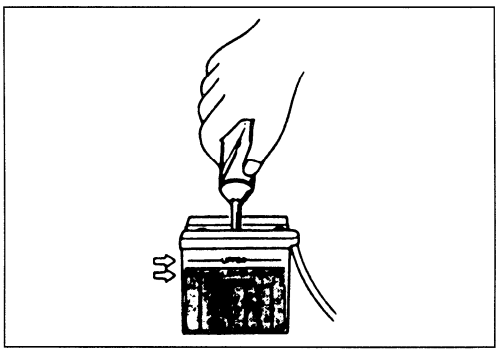


SPECIFICATIONS

Type designation	FB4L-B
Capacity	12V, 14.4 kC (4 Ah)/10HR
Standard electrolyte (S.G)	1.280 at 20°C (68°F)

- When installing the battery onto the motorcycle, connect the breather tube to the battery vent.

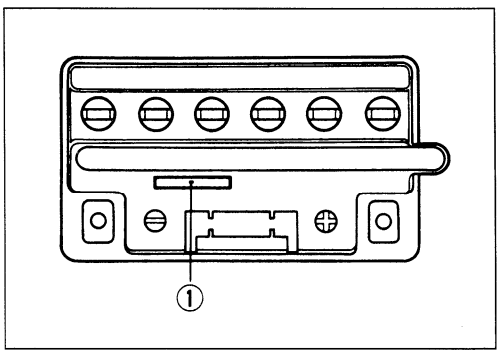
INITIAL CHARGING



FILLING ELECTROLYTE

- Remove the short sealed tube.
- Fill the battery with electrolyte to the MAX level.
- Wait approximately a half-hour and check the electrolyte level.
- If the level has fallen, add electrolyte to the MAX level.
- Slowly charge the battery with a battery charger that is adjusted to the specified current, as described below.

Maximum charging current: 0.4 A



The charging time for a new battery is determined by the number of months that have elapsed since the date of manufacture.
The manufacture's date is indicated by the six-digit stamp ①. The day, month and year are each indicated by two-digits.

Months after manufacturing	Necessary charging hours
Within 6	20
Within 9	30
Within 12	40
Over 12	60

NOTE:
After charging, add only distilled water, if needed, to the MAX level.

- Install the seal caps after charging.
- After charging, allow the battery to cool for two hours, before installing.

SERVICING

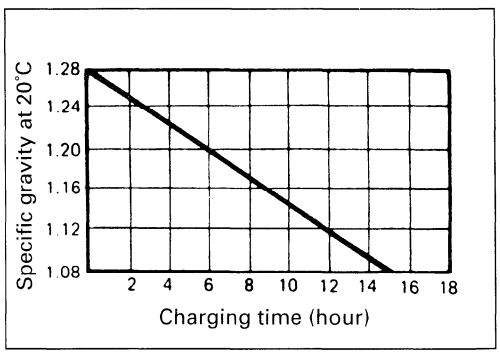
Visually inspect the surface of the battery container. If any signs of cracking or electrolyte leakage from the sides of the battery have occurred, replace the battery with a new one. If the battery terminals are found to be coated with rust or an acidic white powdery substance, use sandpaper to clean them.

Check the electrolyte level, and if necessary, add distilled water to raise the electrolyte level, for each cell, to the MAX level.

- Use a hydrometer to measure the electrolyte S.G. reading. If the reading is 1.22 or less, as corrected to 20°C (68°F), this indicates that the battery needs to be recharged.

Specific gravity at 20°C (68°F)	Condition	Measure
1.250 ~ 1.280	Normal	
1.220 ~ 1.250	Under-charged	Recharge
Below 1.220	Run down	Recharge or replace

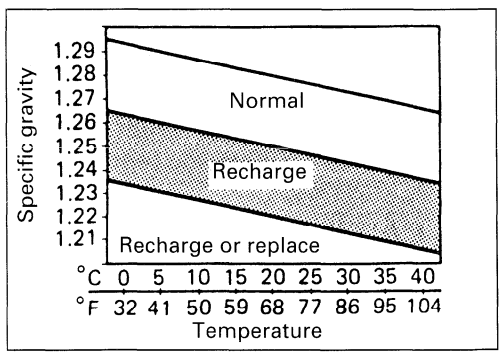
09900-28403: Hydrometer



RECHARGING OPERATION

NOTE:
When recharging, be sure to remove the battery from the motorcycle to protect the regulator/rectifier against excessive voltage.

- Use the following formula to correct the S.G. reading to 20°C (68°F).
  S20 = St + 0.0007 (t-20)
  Where S20 = corrected value of S.G.
  (20°C or 68°F)
  St = value of S.G. read at temperature t°C
  0.0007 = temperature coefficient of S.G.
  t = temperature in degrees centigrade at which St was read.
- Check the corrected S.G. reading with the chart, to determine the recharging time in hours. This is when a constant-current charge at a rate of 0.4 amperes (which is a tenth of the capacity of the present battery) is used.
- When recharging, do not allow the electrolyte temperature to exceed 45°C (113 °F). Interrupt the operation, as necessary, to let the electrolyte cool down.



Electrolyte specific gravity: 1.280 at 20°C (68°F)

⚠ CAUTION

Do not quick charge the battery. Quick charging will shorten the life of the battery.

SERVICE LIFE

Lead oxide is on the plates of the battery and will gradually come off of the plates during the life of the battery. When the bottom of the battery case becomes full of this sediment, replace the battery. If the battery is not charged for a long period of time, lead sulfate may accumulate on the surface of the plates. If this occurs, replace the battery.

STORAGE

When a battery is not used for a long period of time, sulfation may occur. When the motorcycle is not used for more than one month (especially during the winter season), the battery should be charged at least once a month.

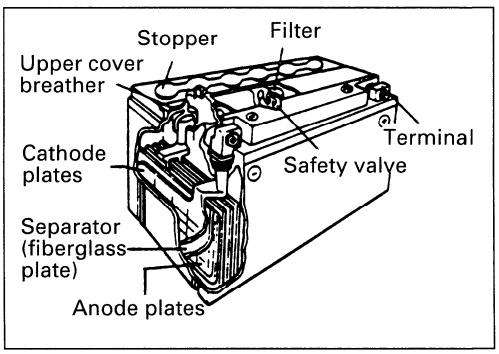
⚠ WARNING

* **Before charging a battery, remove the seal cap from each cell.**
* **Keep fire and sparks away from a battery which is being charged.**
* **When removing a battery from the motorcycle, be sure to remove the battery (⊖) terminal first.**

BATTERY (For the others)

SPECIFICATIONS

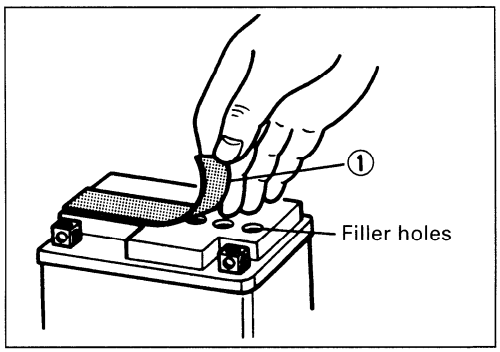
Type designation	YT4L-BS
Capacity	12V, 10.8 kC (3 Ah)/10HR
Standard electrolyte S.G	1.320 at 20°C (68°F)



INITIAL CHARGING

FILLING ELECTROLYTE

- Remove the aluminum tape ① which seals the battery filler holes.

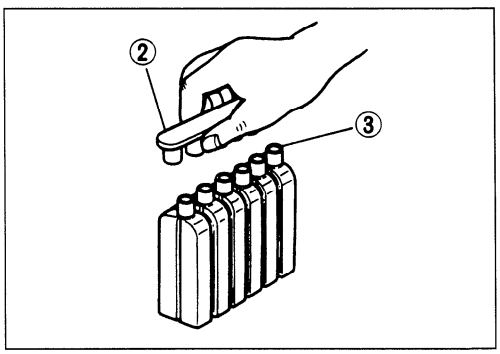


- Remove the caps ② from the electrolyte container.

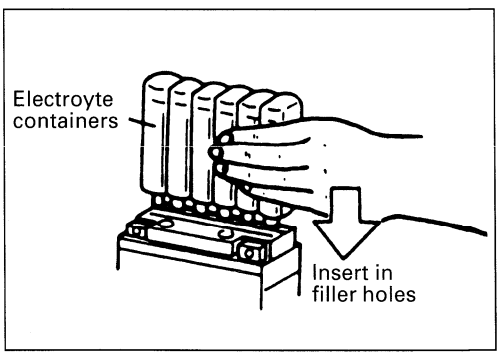
NOTE:

* *Do not remove or pierce the sealed areas ③ of the electrolyte container.*

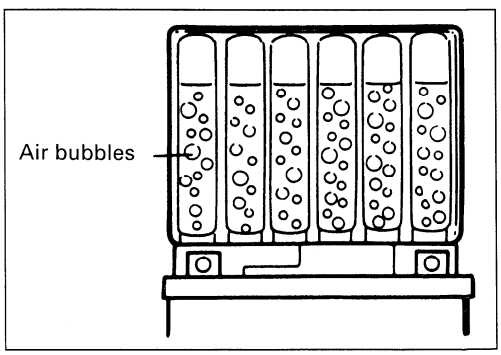
* *After completely filling the battery with electrolyte, use the caps ② from the electrolyte container to seal the battery filler holes.*



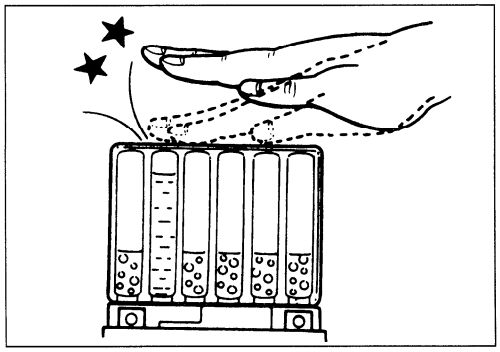
- Insert the nozzles of the electrolyte container into the battery's electrolyte filler holes. Hold the electrolyte container firmly so that it does not fall. Do not allow any of the electrolyte to spill.



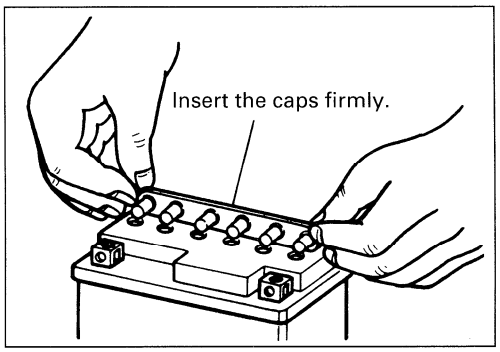
- Make sure that the air bubbles rise to the top of each electrolyte container and leave the electrolyte container in this position for more than 20 minutes.



NOTE:
If air bubbles do not rise from any one of the filler ports, tap the bottom of the electrolyte container two or three times. Never remove the electrolyte container from the battery while there is still electrolyte in the container.

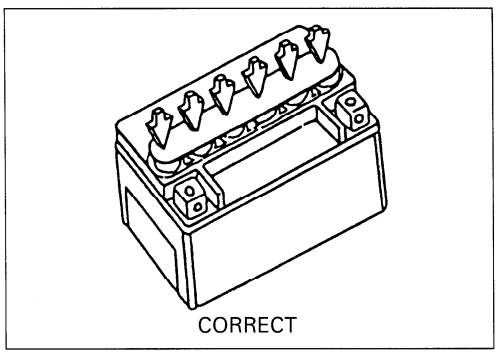


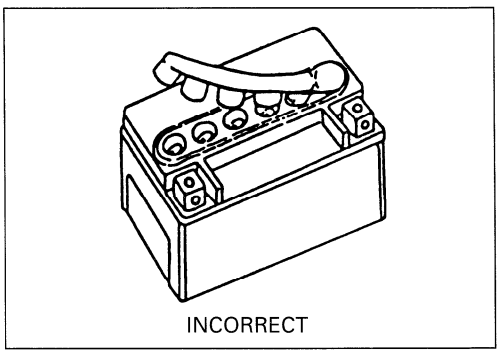
- After the electrolyte container is completely empty, remove it from the battery and wait about 20 minutes.
- Insert the caps firmly into the filler holes, so that the top of the caps do not protrude above the upper surface of the battery's top cover.



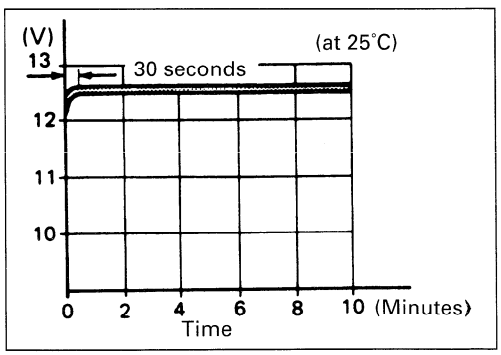
⚠ CAUTION

* **The charging system for a MF battery is different from that of a conventional battery. Only use a MF battery charger.**
* **Do not remove the caps once they are installed in the battery.**


CORRECT


INCORRECT

- Measure the battery voltage with a SUZUKI pocket tester. The pocket tester should indicate more than 12.5 - 12.6V (DC), as shown. If the battery voltage is lower than specification, charge the battery with a battery charger.



NOTE:
Initial charging for a new battery is recommended if two years have elapsed since the date of manufacture.

SERVICING

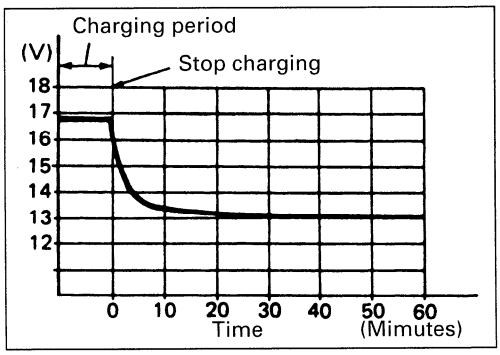
Visually inspect the surface of the battery container. If any signs of cracking or electrolyte leakage from the sides of the battery have occurred, replace the battery with a new one. If the battery terminals are found to be coated with rust or an acidic white powdery substance, clean the battery terminals with sandpaper.

RECHARGING OPERATION

- Measure the battery voltage with a pocket tester. If the voltage reading is less than 12.0V (DC), recharge the battery with a battery charger.

⚠ CAUTION

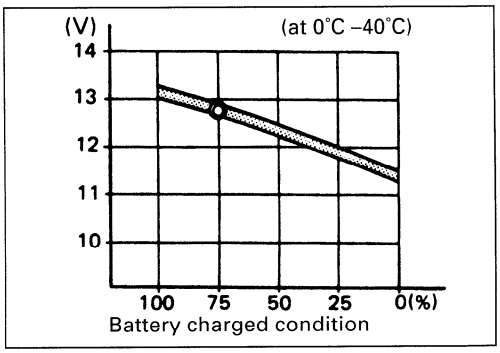
When recharging the battery, remove the battery from the motorcycle.



NOTE:
Do not remove the caps on the top of the battery, while recharging.

Recharging time:

0.4 A for 5 to 10 hours or 4 A for 30 minutes



⚠ CAUTION

Be careful not to permit the charging current to exceed 4 A at any time.

- After recharging, wait at least 30 minutes and then check the battery voltage with a pocket tester.
- If the battery voltage is less than 12.5 V, recharge the battery again.
- If the battery voltage is still less than 12.5 V after recharging, replace the battery with a new one.
- When a battery is left unused for a long time, it's voltage needs to be regularly measured. When the motorcycle is not used for more than one month (especially during the winter season), check the battery voltage at least once a month.

SERVICING INFORMATION

CONTENTS

TROUBLESHOOTING

ENGINE

Complaint	Symptom and possible causes	Remedy
Engine will not start or is hard to start.	**Compression too low**	
	1. Excessively worn cylinder or piston rings.	Replace.
	2. Stiff piston ring.	Repair or replace.
	3. Gas leaks from the joint in crankcase, cylinder or cylinder head.	Repair or replace.
	4. Damaged reed valve.	Replace.
	5. Spark plug too loose.	Tighten.
	6. Broken, cracked or damaged piston.	Replace.
	Spark plug not sparking	
	1. Damaged spark plug or spark plug cap.	Replace.
	2. Fouled spark plug.	Clean and dry.
	3. Defective CDI/ignition coil or stator coil.	Replace.
	4. Open or short in high-tension cord.	Replace.
	5. Defective ignition switch.	Replace.
	No fuel reaching the carburetor	
	1. Clogged hole in the fuel tank cap.	Clean.
	2. Clogged or defective fuel valve.	Clean or replace.
	3. Defective carburetor needle valve.	Replace.
	4. Clogged fuel hose or defective vacuum hose.	Clean or replace.
Engine stalls easily.	1. Carbon deposited on the spark plug.	Clean.
	2. Defective CDI/ignition coil.	Replace.
	3. Clogged fuel hose.	Clean.
	4. Clogged jets in carburetor.	Clean.
	5. Clogged exhaust pipe.	Clean.
Noisy engine.	**Noise appears to come from piston**	
	1. Worn down piston or cylinder.	Replace.
	2. Carbon built-up in the combustion chamber.	Clean.
	3. Worn piston pin, bearing or piston pin bore.	Replace.
	4. Worn piston rings or ring grooves.	Replace.
	Noise seems to come from crankshaft	
	1. Worn or burnt crankshaft bearings.	Replace.
	2. Big-end bearing worn or burnt.	Replace.
	Noise seems to come from final gear box	
	1. Gears worn or rubbing	Replace.
	2. Badly worn splines.	Replace.
	3. Worn or damaged bearings of driveshaft or rear axle shaft.	Replace.
Slipping clutch.	1. Worn or damaged clutch shoes.	Replace.
	2. Worn clutch drum.	Replace.
Engine idles poorly.	1. Excessively worn cylinder or piston rings.	Replace.
	2. Stiff piston ring.	Replace.
	3. Gas leaks from crankshaft oil seal.	Replace.
	4. Excessive spark plug gap.	Adjust or replace.
	5. Defective CDI/ignition coil.	Replace.
	6. Defective stator coil.	Replace.
	7. Float-chamber fuel level out of adjustment.	Adjust float height.
	8. Clogged jets in carburetor.	Clean or adjust.
	9. Broken or damaged reed valve.	Replace.

Complaint	Symptom and possible causes	Remedy
Engine runs poorly in high-speed range.	1. Excessively worn cylinder or piston rings. 2. Stiff piston ring. 3. Spark plug gap too narrow. 4. Ignition not advanced sufficiently due to poorly working CDI/ignition coil. 5. Defective stator coil. 6. Float-chamber fuel level too low. 7. Clogged air cleaner element. 8. Clogged fuel hose, resulting in inadequate fuel supply to carburetor. 9. Clogged fuel valve vacuum pipe.	Replace. Replace. Adjust. Replace. Replace. Adjust float height. Clean. Clean and prime. Clean.
Dirty or heavy exhaust smoke.	1. Incorrect engine oil.	Change.
Engine lacks power.	1. Excessively worn cylinder or piston rings. 2. Stiff piston rings. 3. Gas leaks from crankshaft oil seal. 4. Spark plug gap incorrect. 5. Clogged jets in carburetor. 6. Float-chamber fuel level out of adjustment. 7. Clogged air cleaner element. 8. Fouled spark plug. 9. Sucking air from intake pipe. 10. Slipping or worn drive belt. 11. Damaged/worn rollers in the movable drive face. 12. Weakened movable drive face spring. 13. Excessively rich air-fuel mixture due to defective starter system.	Replace. Replace. Replace. Regap or replace spark plug. Clean. Adjust float height. Clean. Clean or replace. Retighten or replace. Replace. Replace. Replace. Replace.
Engine overheats.	1. Heavy carbon deposit on piston crown. 2. Defective oil pump or clogged oil circuit. 3. Float chamber fuel level too low. 4. Air leakage from intake pipe. 5. Incorrect engine oil. 6. Incorrect spark plug. 7. Clogged exhaust pipe/muffler. 8. Defective cooling system. (AY50W)	Clean. Replace or clean. Adjust float height. Retighten or replace. Change. Change. Clean or replace. See radiator section

RADIATOR (AY50W)

Complaint	Symptom and possible causes	Remedy
Engine overheats.	1. Not enough engine coolant. 2. Radiator core clogged. 3. Defective temperature switch. 4. Clogged engine coolant passage. 5. Air trapped in the cooling circuit. 6. Defective water pump. 7. Incorrect engine coolant.	Add coolant. Clean. Replace. Clean. Bleed out air. Replace. Replace.
Engine overcools.	1. Extremely low ambient temperature.	Install radiator cover.

CARBURETOR

Complaint	Symptom and possible causes	Remedy
Trouble with starting.	1. Defective thermoelement. 2. Air leaking from the joint between intake pipe and carburetor. 3. Air leaking from carburetor's joint or vacuum hose joint. 4. Clogged fuel pipe.	Replace. Check intake pipe and carburetor for tightness, and replace gasket. Check and clean. Clean.
Idling or low-speed trouble.	1. Pilot jet is clogged or loose. 2. Air leaking from carburetor's joint, vacuum pipe joint, or intake pipe. 3. Thermoelement is not operating properly.	Check and clean. Clean and replace. Check and replace.
Medium-or high speed trouble.	1. Main jet is clogged. 2. Needle jet is clogged. 3. Fuel level is improperly set. 4. Throttle valve is not operating properly. 5. Fuel filter is clogged.	Check and clean. Check and clean. Check and adjust float height. Check throttle valve for operation. Check and clean.
Overflow and fuel level fluctuations.	1. Needle valve is worn or damaged. 2. Broken spring in needle valve. 3. Float is not working properly. 4. Foreign matter has adhered to the needle valve. 5. Fuel level is too high or too low.	Replace. Replace. Check and adjust. Clean. Adjust float height.

CHASSIS

Complaint	Symptom and possible causes	Remedy
Heavy steering.	1. Steering stem nut overtightened. 2. Broken bearing/race in steering stem. 3. Distorted steering stem. 4. Not enough pressure in tires.	Adjust. Replace. Replace. Adjust.
Wobbly handlebar.	1. Loss of balance between right and left front fork tubes. 2. Distorted front axle or crooked tire.	Replace. Replace.
Wobbly front wheel.	1. Distorted wheel rim. 2. Worn front wheel bearings. 3. Defective or incorrect tire. 4. Loose axle nut. 5. Loose bolts on the rear shock absorber. 6. Worn engine mounting bushing. 7. Loose engine mounting nuts or bolts.	Replace. Replace. Replace. Tighten. Tighten. Replace. Tighten.
Front suspension too soft.	1. Weakened springs.	Replace.
Noisy front suspension.	1. Not enough grease on the front suspension. 2. Loose bolts on suspension.	Refill. Tighten.

Complaint	Symptom and possible causes	Remedy
Wobbly rear wheel.	1. Distorted wheel rim. 2. Defective or incorrect tire. 3. Loose nut on the rear axle. 4. Worn engine mounting bushing. 5. Loose engine mounting nuts or bolts.	Replace Replace Tighten Replace Tighten
Rear suspension too soft.	1. Weakened spring. 2. Rear shock absorber leaks oil.	Replace Replace
Noisy rear suspension.	1. Loose bolts on the rear shock absorber. 2. Worn engine mounting bushing,	Tighten Replace

BRAKES

Complaint	Symptom and possible causes	Remedy
Insufficient brake power.	1. Leakage of brake fluid from hydraulic system. 2. Worn brake pads. 3. Oil on brake pad surface. 4. Worn brake disc. 5. Air in hydraulic system. 6. Worn brake shoes. 7. Oil on brake shoe surfaces. 8. Excessively worn brake drum. 9. Excessive brake lever play.	Repair or replace. Replace. Clean brake disc and brake pads. Replace. Bleed air. Replace. Replace. Replace. Adjust.
Brake squeaking.	1. Carbon adhesion on brake pad surface. 2. Tilted brake pad. 3. Damaged wheel bearing. 4. Worn brake pad. 5. Foreign material in brake fluid. 6. Clogged return port of master cylinder. 7. Brake shoe surface glazed. 8. Loose front axle or rear axle nut. 9. Worn brake shoes.	Repair surface with sandpaper. Modify pad fitting or replace. Replace. Replace. Replace brake fluid. Disassemble and clean master cylinder. Clean surface with sandpaper. Tighten to specified torque. Replace.
Excessive brake lever stroke.	1. Air in hydraulic system. 2. Insufficient brake fluid. 3. Improper brake fluid. 4. Worn brake cam lever. 5. Excessively worn brake shoe and/or drum.	Bleed air. Replenish fluid to specified level, bleed air. Replace with correct fluid. Replace. Replace.
Leakage of brake fluid.	1. Insufficient tightening of connection joints. 2. Cracked hose. 3. Worn piston seal.	Tighten to specified torque. Replace. Replace.
Brake drags.	1. Rusty parts. 2. Insufficient lubrication.	Clean and lubricate. Apply a proper amount of lubricant.

ELECTRICAL

Complaint	Symptom and possible causes	Remedy
No sparking or poor sparking.	1. Defective CDI/ignition coil. 2. Defective spark plug. 3. Defective stator coil or pick-up coil. 4. Loose connection of lead wire.	Replace. Replace. Replace. Connect/tighten.
Spark plug soon becomes fouled with carbon.	1. Mixture too rich. 2. Idling speed set too high. 3. Incorrect gasoline. 4. Dirty element in air cleaner. 5. Spark plug too cold. 6. Incorrect engine oil.	Adjust carburetor. Adjust carburetor. Change. Clean. Replace with hot type plug. Replace.
Spark plug electrodes overheat or burn.	1. Spark plug too hot. 2. Engine overheats. 3. Loose spark plug. 4. Mixture too lean. 5. Not enough engine oil.	Replace with cold type plug. Tune-up. Retighten. Adjust carburetor. Check oil pump.
Magneto does not charge.	1. Open or short in lead wires, or loose lead connections. 2. Shorted, grounded or open magneto coil. 3. Shorted or open regulator/rectifier.	Repair, replace or retighten. Replace. Replace.
Magneto charges but charging rate is below the specifications.	1. Lead wires tend to get shorted or open-circuited or loosely connected at terminal. 2. Grounded or open-circuited stator coils or magneto. 3. Defective regulator/rectifier. 4. Defective cell plates in the battery.	Repair or retighten. Replace. Replace. Replace the battery.
Magneto overcharges.	1. Internal short-circuit in the battery. 2. Damaged or defective resistor element in the regulator/rectifier.	Replace the battery. Replace.
Unstable charging.	1. Lead wire insulation frayed due to vibration, resulting in intermittent shorting. 2. Magneto coil internally shorted. 3. Defective regulator/rectifier.	Repair or replace. Replace. Replace.
Starter switch does not work.	1. Run down battery. 2. Defective switch contacts. 3. Brushes do not seat properly on the commutator in the starter motor. 4. Defective starter relay. 5. Defective starter pinion gear assembly. 6. Defective brake light switch circuit.(front or rear brakes)	Recharge or replace. Replace. Repair or replace. Replace. Replace. Replace/repair.

BATTERY (for conventional battery for P-53)

Complaint	Symptom and possible causes	Remedy
Sulfation, acidic white powdery substance or spots on surfaces of cell plates.	1. Not enough electrolyte.	Add distilled water, if the battery has not been damaged and sulfation has not advanced too far, then recharge.
	2. Cracked battery case.	Replace the battery.
	3. Battery has been left in a run-down condition for a long time.	Replace the battery.
	4. Foreign matter has entered the battery and has become mixed with the electrolyte.	If sulfation has not advanced too far, try to restore the battery by replacing the electrolyte, recharging it fully with the battery detached from the motorcycle and then adjusting the electrolyte S.G.
Battery runs down quickly.	1. The charging method is not correct.	Check the generator, regulator/rectifier and circuit connections and make necessary adjustments to obtain specified charging operation.
	2. Cell plates have lost much of their active material as a result of over-charging.	Replace the battery and correct the charging system.
	3. A short-circuit condition exists within the battery to excessive accumulation of sediments caused by the high electrolyte S.G.	Replace the battery.
	4. Electrolyte S.G. is too low.	Recharge the battery fully and adjust electrolyte S.G.
	5. Foreign matter has entered the battery and has become mixed with the electrolyte.	Replace the electrolyte, recharge the battery and then adjust S.G.
	6. Battery is too old.	Replace the battery.
Reversed battery polarity.	Battery leads have been connected improperly (i.e., ⊖ to ⊕ and ⊕ to ⊖).	Replace the battery and be sure to connect the battery properly.
Battery "sulfation"	1. Charging rate is either too high or too low. When not in use, the battery should be checked at least once a month to avoid sulfation.	Replace the battery.
	2. Excessive or insufficient, battery electrolyte or the specific gravity is too high or too low.	Keep the electrolyte at the prescribed level, or adjust the S.G. by consulting the battery manufacturer's directions.
	3. The battery was left unused for too long in a cold climate.	Replace the battery, if badly sulfated.
Battery discharges too rapidly.	1. Dirty container top and sides.	Clean.
	2. Impurities in the electrolyte or electrolyte S.G. is too high.	Change the electrolyte by consulting the battery maker's directions.

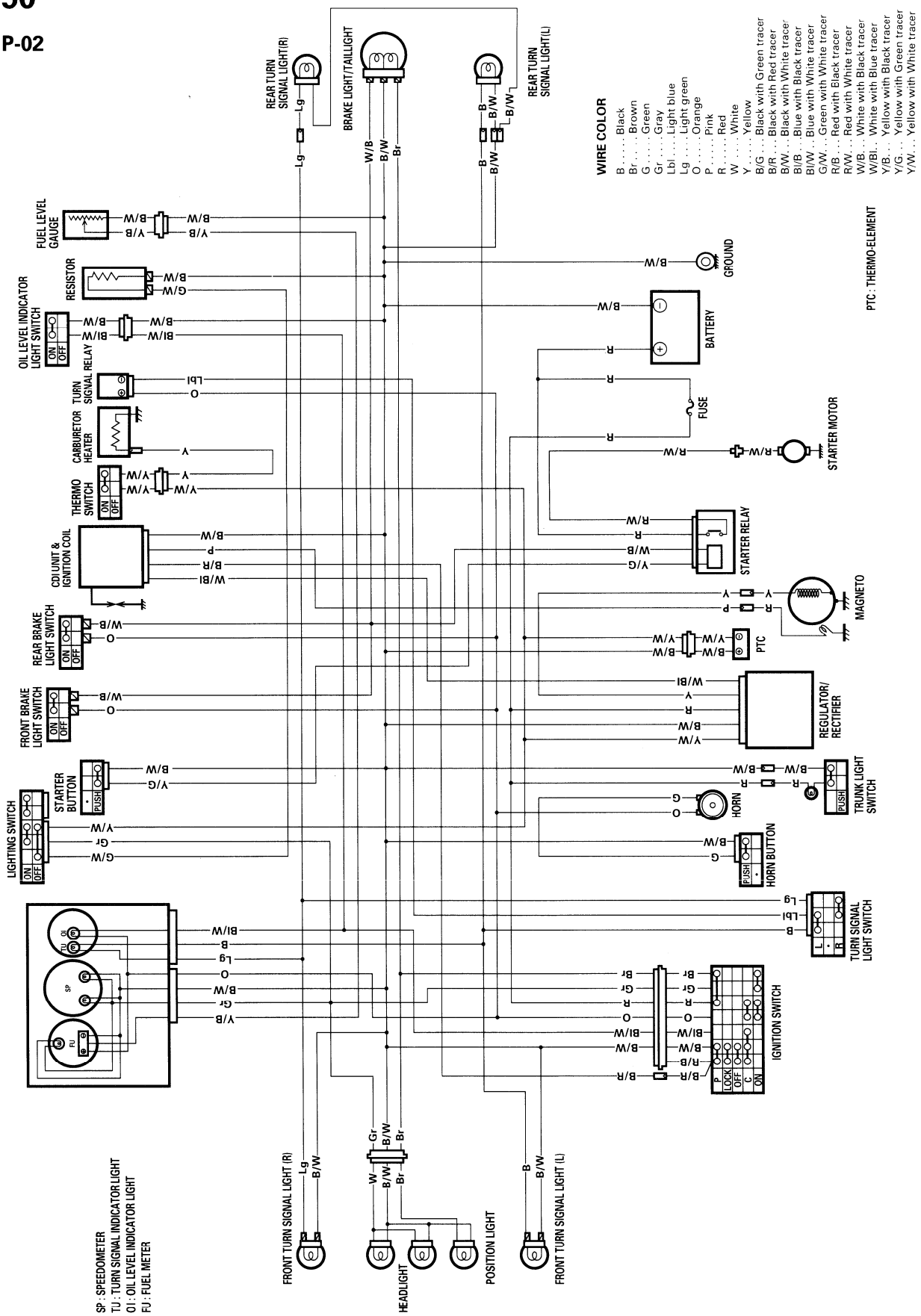
BATTERY (MF battery)

Complaint	Symptom and possible causes	Remedy
Battery runs down quickly.	1. The charging method is not correct.	Check the magneto and regulator/rectifier circuit connections, and make necessary adjustment to obtain specified charging operation.
	2. Cell plates have lost much of their active material as a result of overcharging.	Replace the battery and correct the charging system.
	3. A short-circuit condition exists within the battery.	Replace the battery.
	4. Battery is too old.	Replace the battery.
Reversed battery polarity.	1. Battery leads have been connected improperly (i.e., ⊖ to ⊕ and ⊕ to ⊖)	Replace the battery and be sure to connect the battery properly.
Battery discharges too rapidly.	1. Dirty container top and sides.	Clean.
	2. Battery is too old.	Replace.

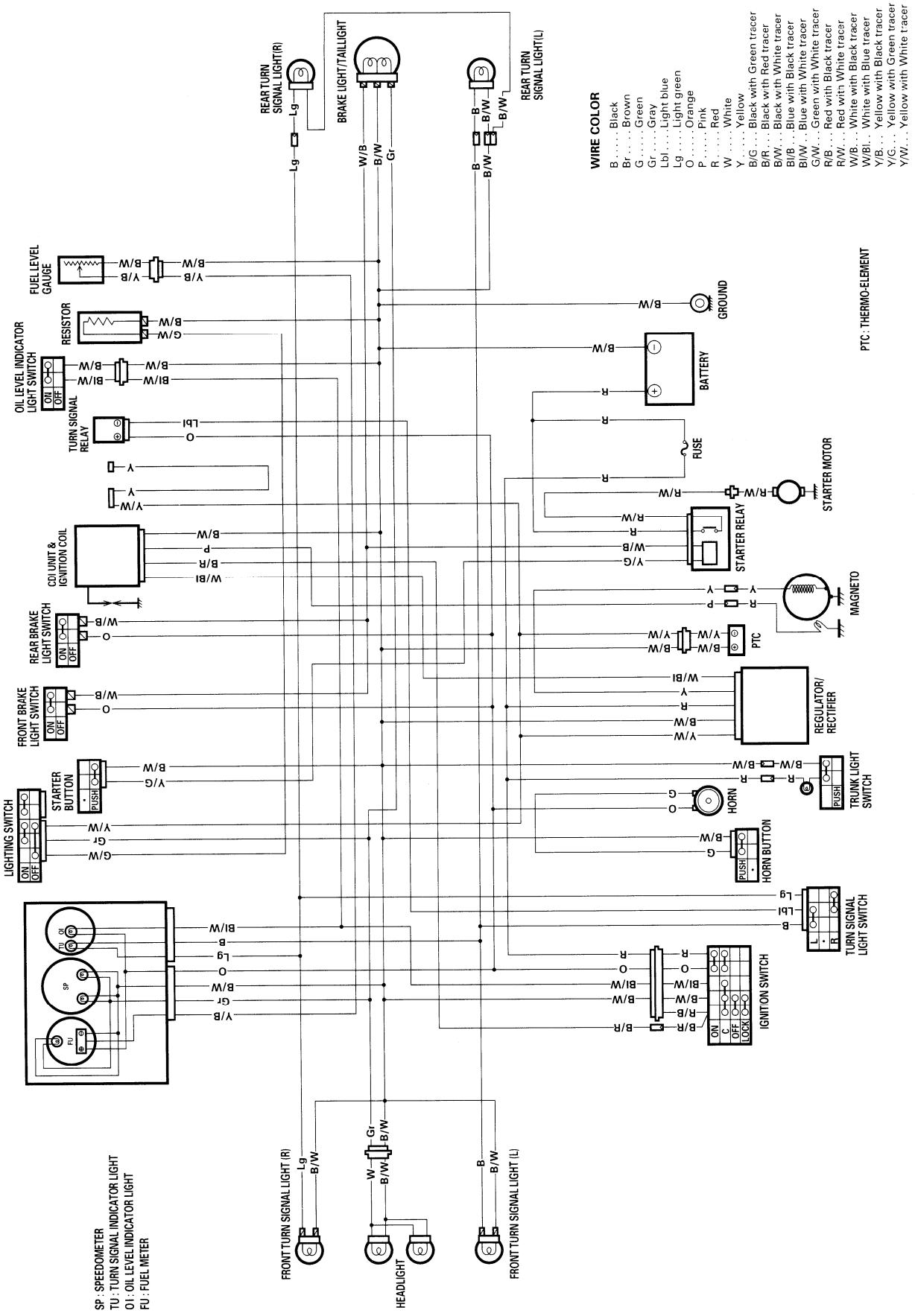
WIRING DIAGRAM

AY50

For P-02

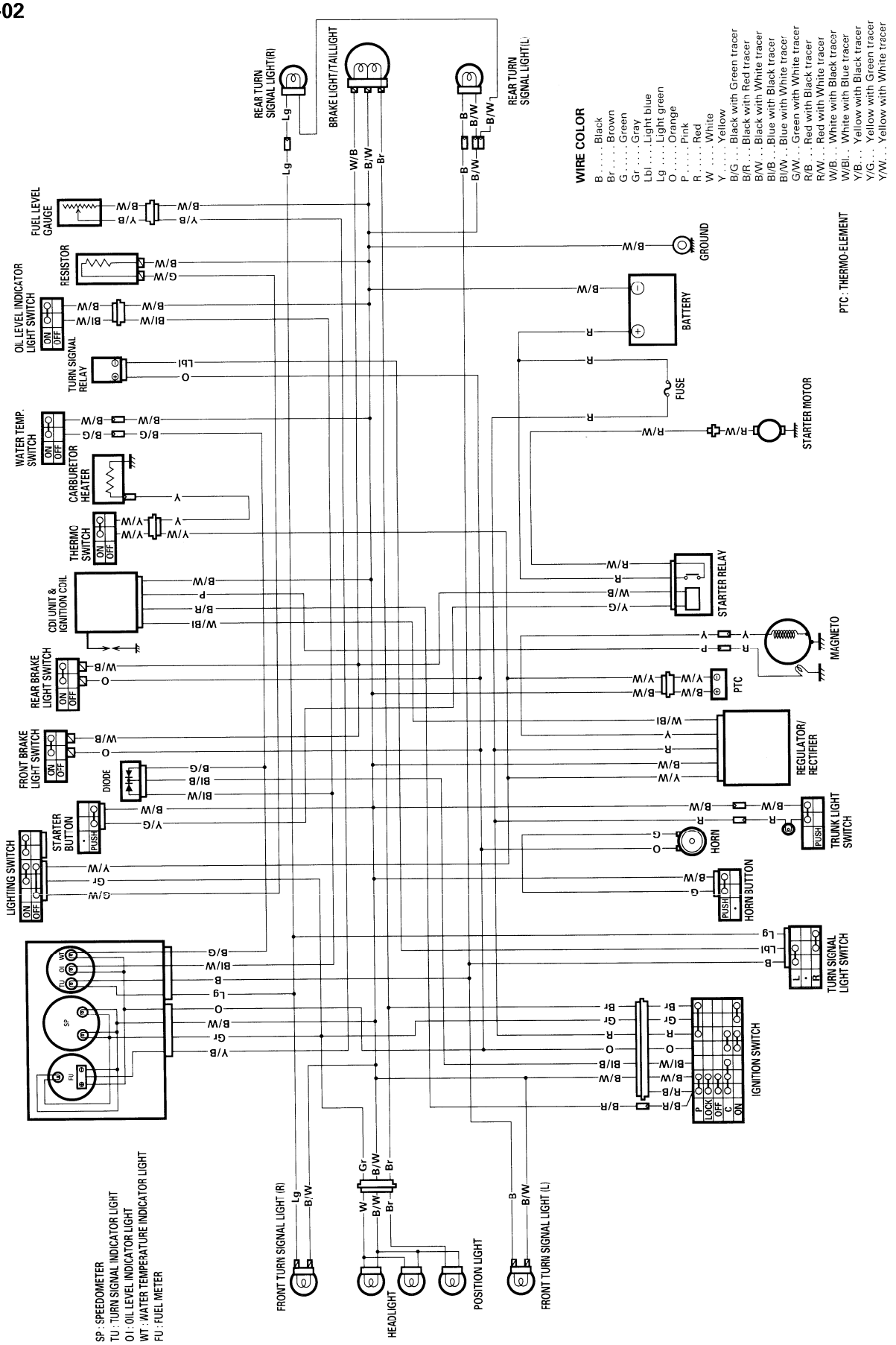


For the others



AY50W

For P-02



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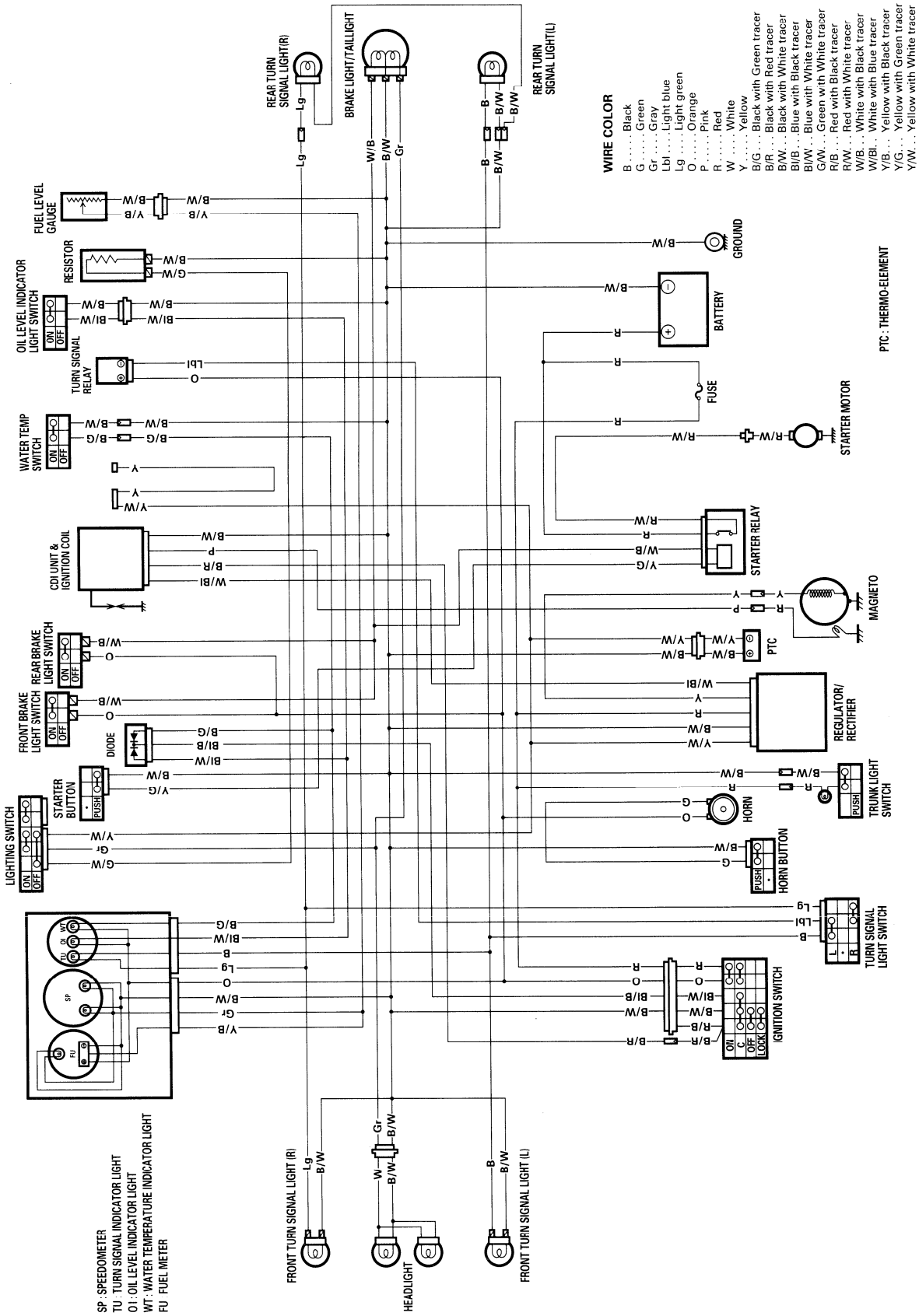
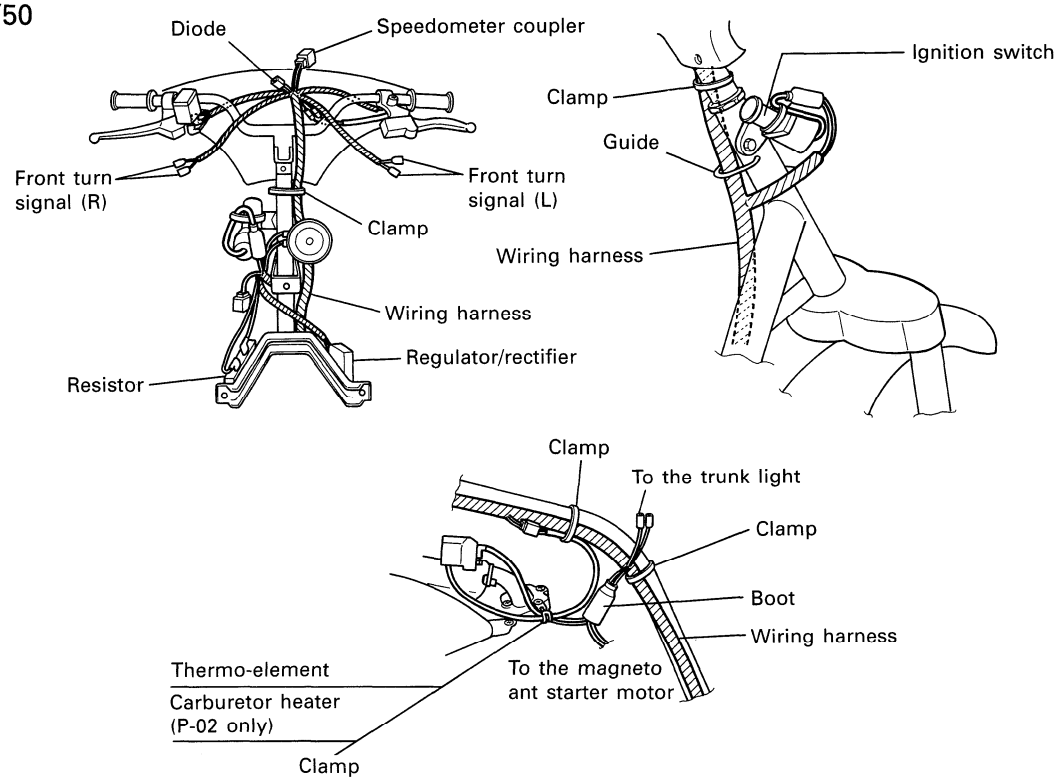


WIRE, CABLE AND HOSE ROUTING

WIRE ROUTING

For AY50



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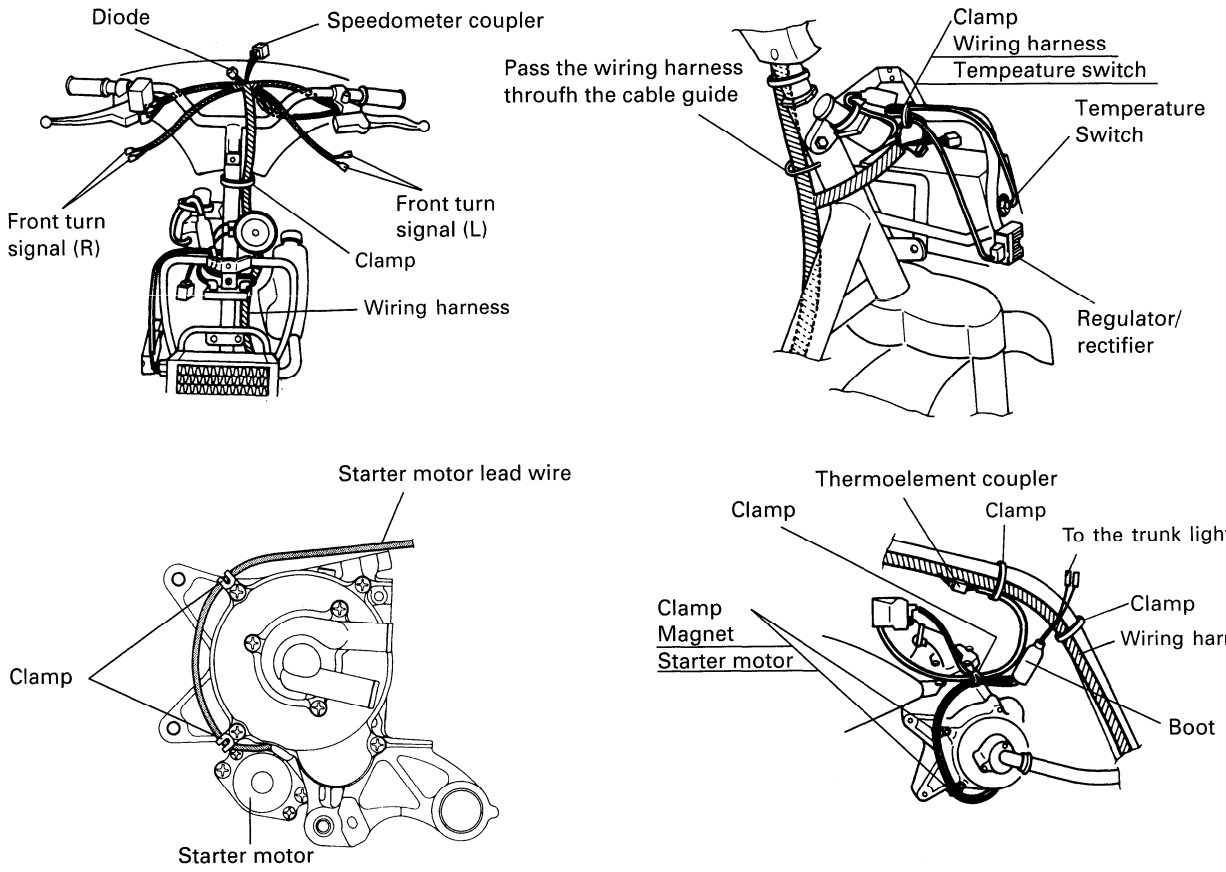
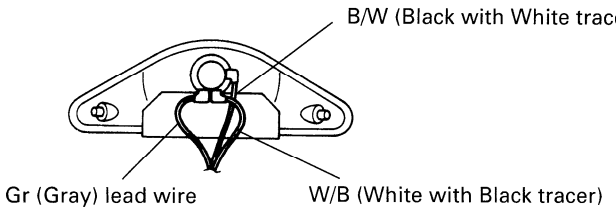
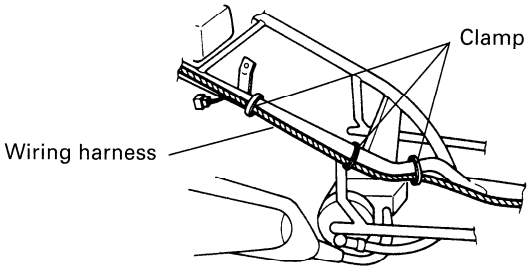
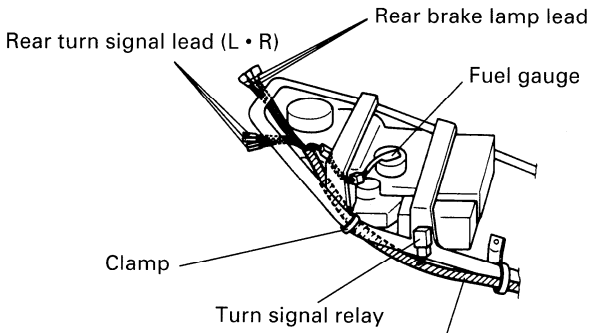
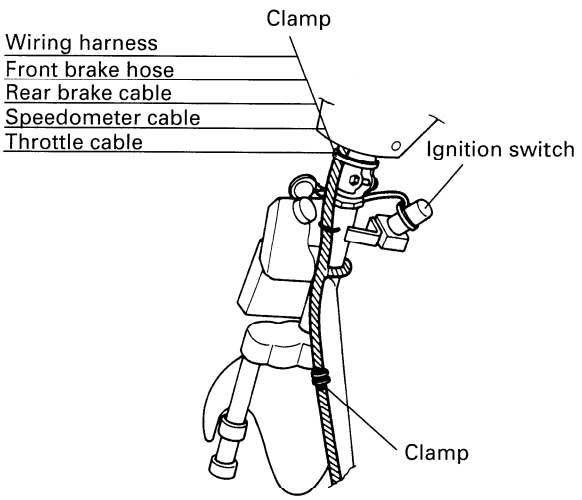
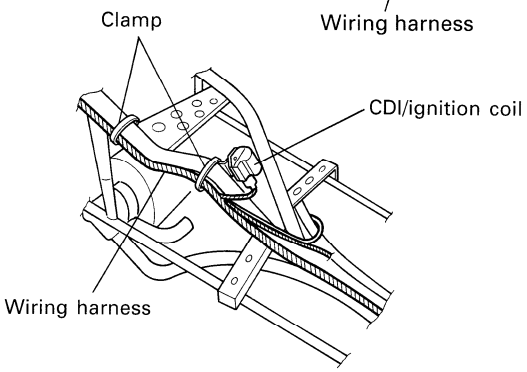


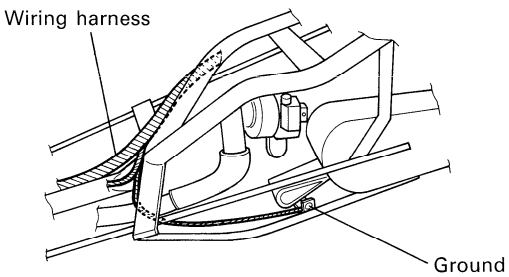

B/W (Black with White tracer)
Gr (Gray) lead wire
W/B (White with Black tracer)

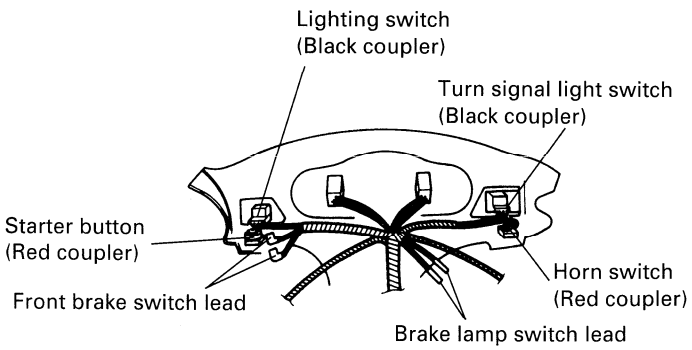

Clamp
Wiring harness

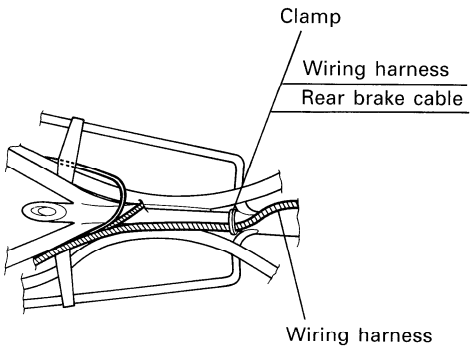

Rear brake lamp lead
Rear turn signal lead (L • R)
Fuel gauge
Clamp
Turn signal relay
Wiring harness

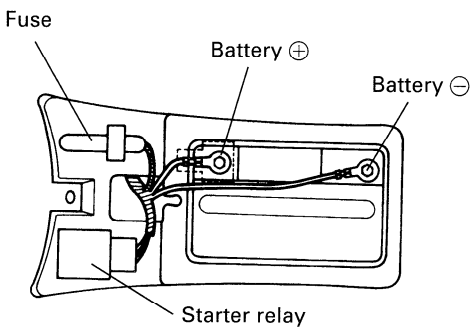

Clamp
Wiring harness
Front brake hose
Rear brake cable
Speedometer cable
Throttle cable
Ignition switch
Clamp


Clamp
CDI/ignition coil
Wiring harness

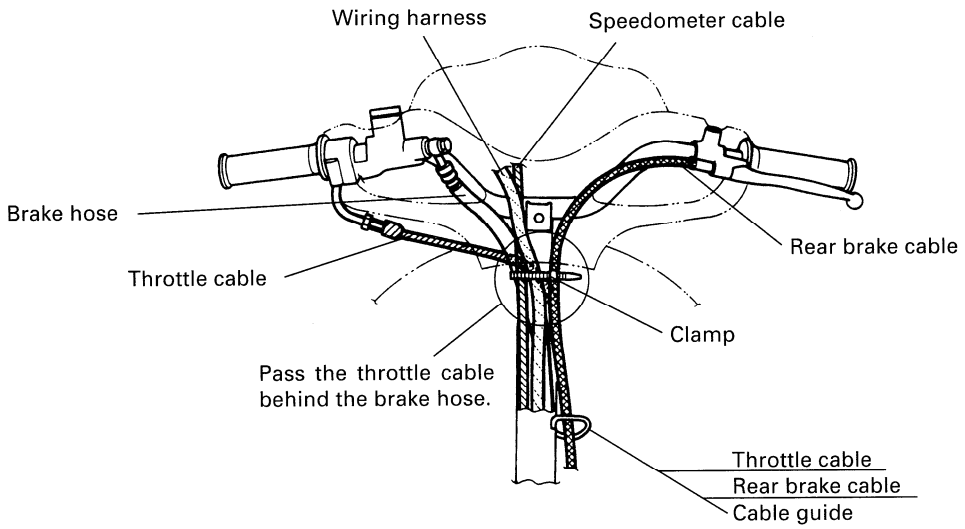

Wiring harness
Ground

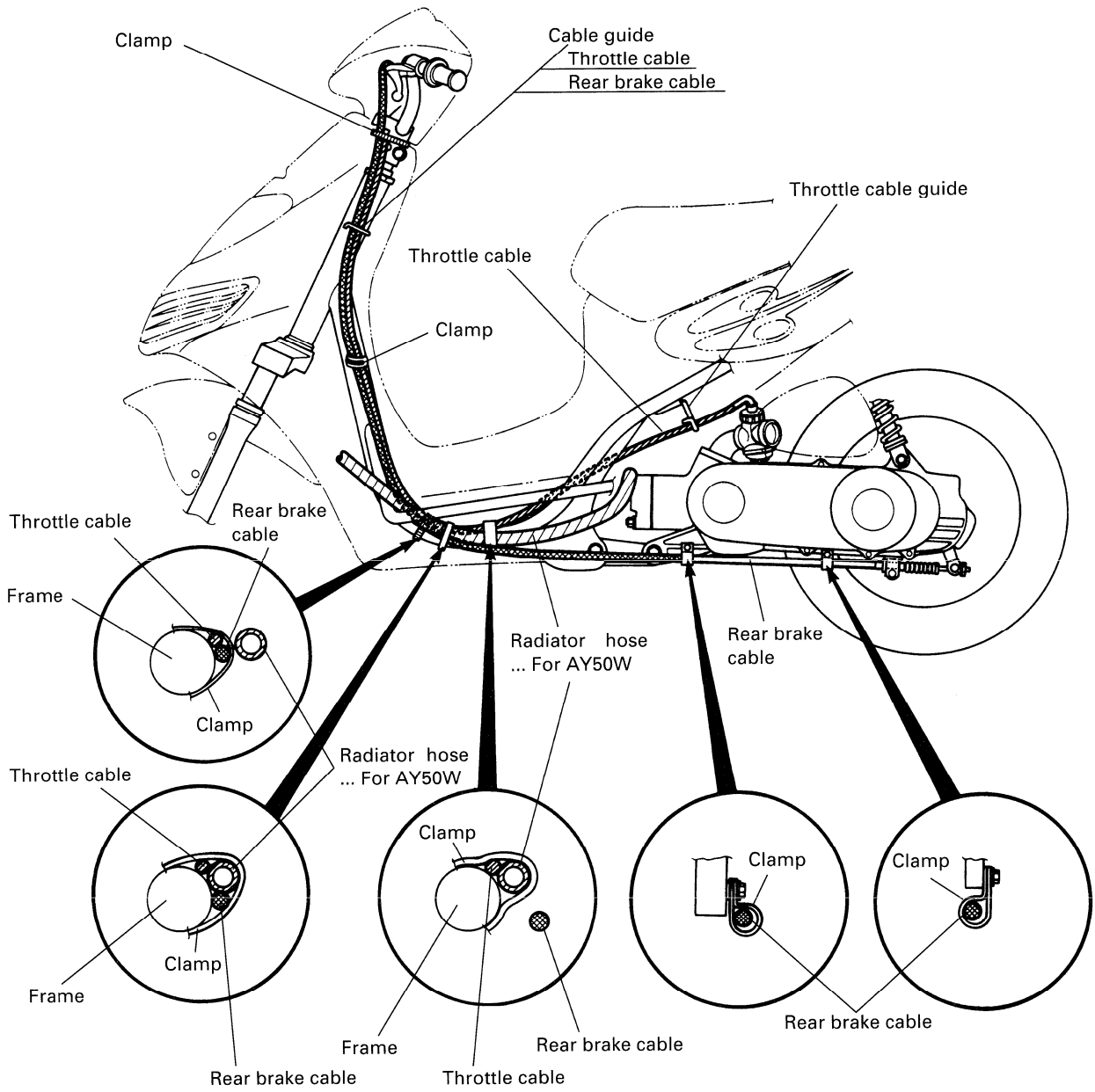

Lighting switch
(Black coupler)
Turn signal light switch
(Black coupler)
Starter button
(Red coupler)
Front brake switch lead
Horn switch
(Red coupler)
Brake lamp switch lead


Clamp
Wiring harness
Rear brake cable
Wiring harness


Fuse
Battery ⊕
Battery ⊖
Starter relay

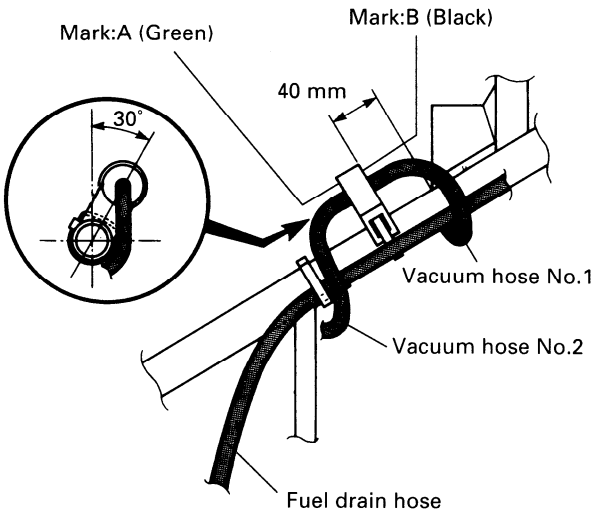
CABLE ROUTING

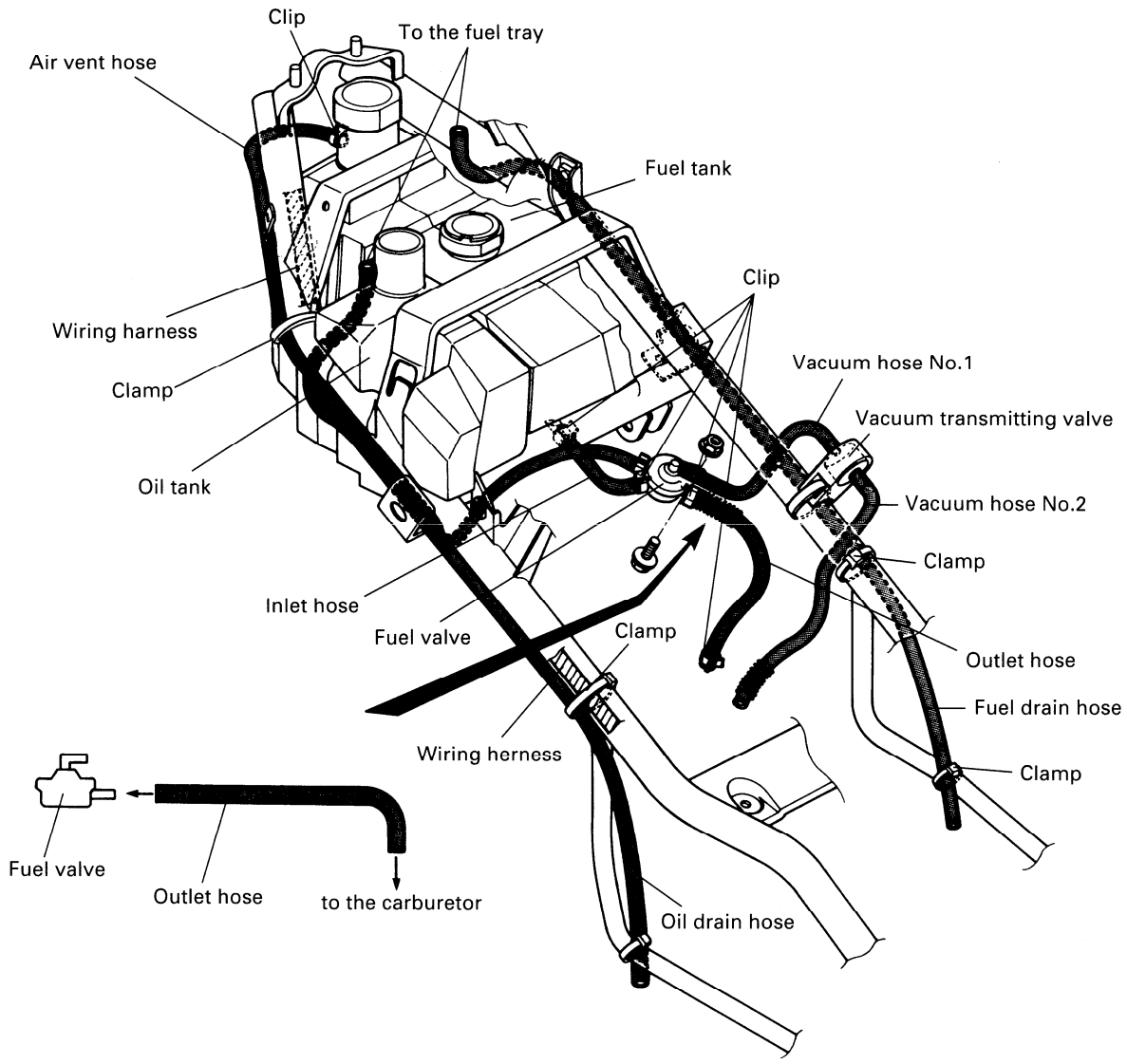




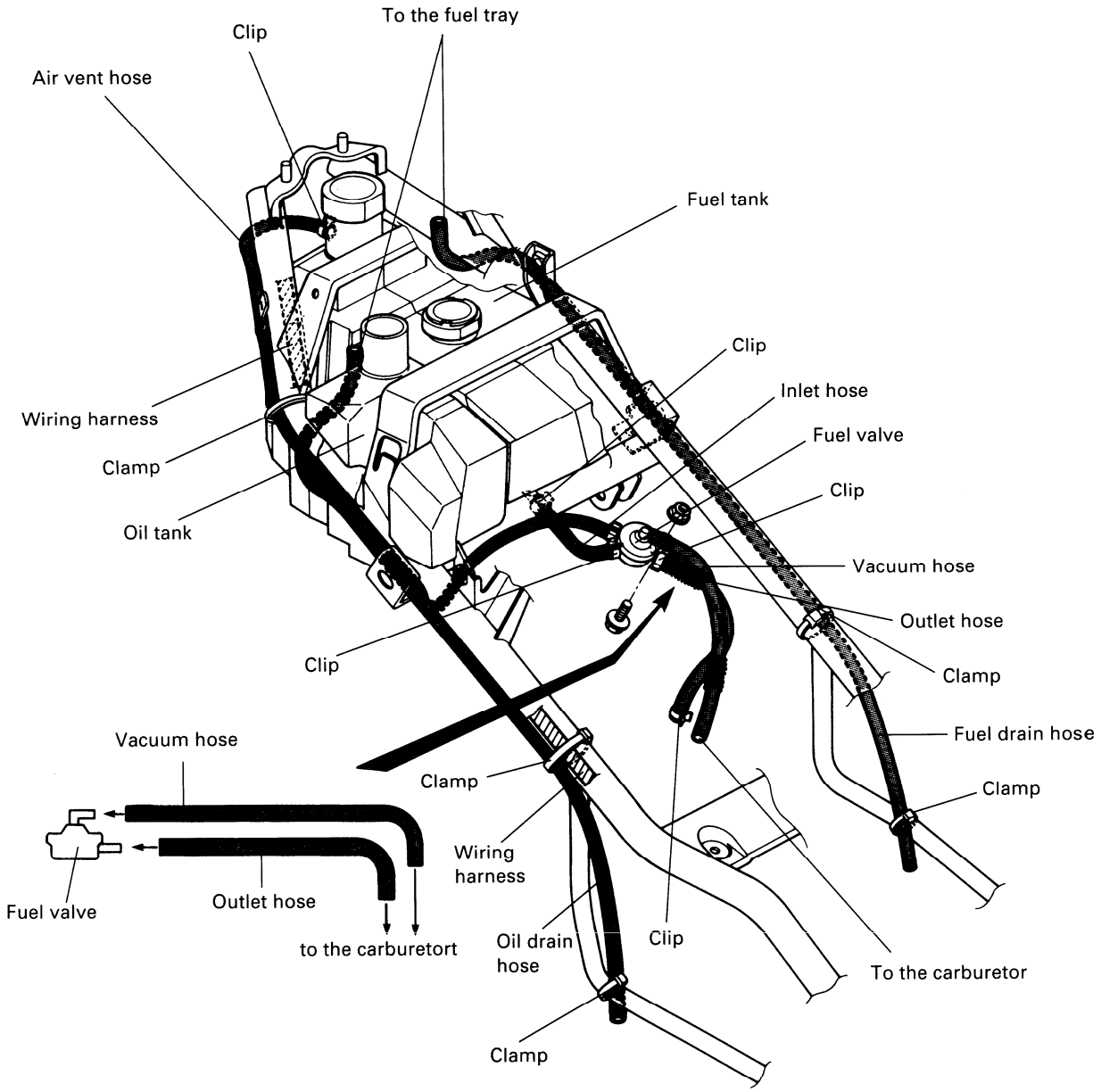
FUEL HOSE ROUTING

For P-04

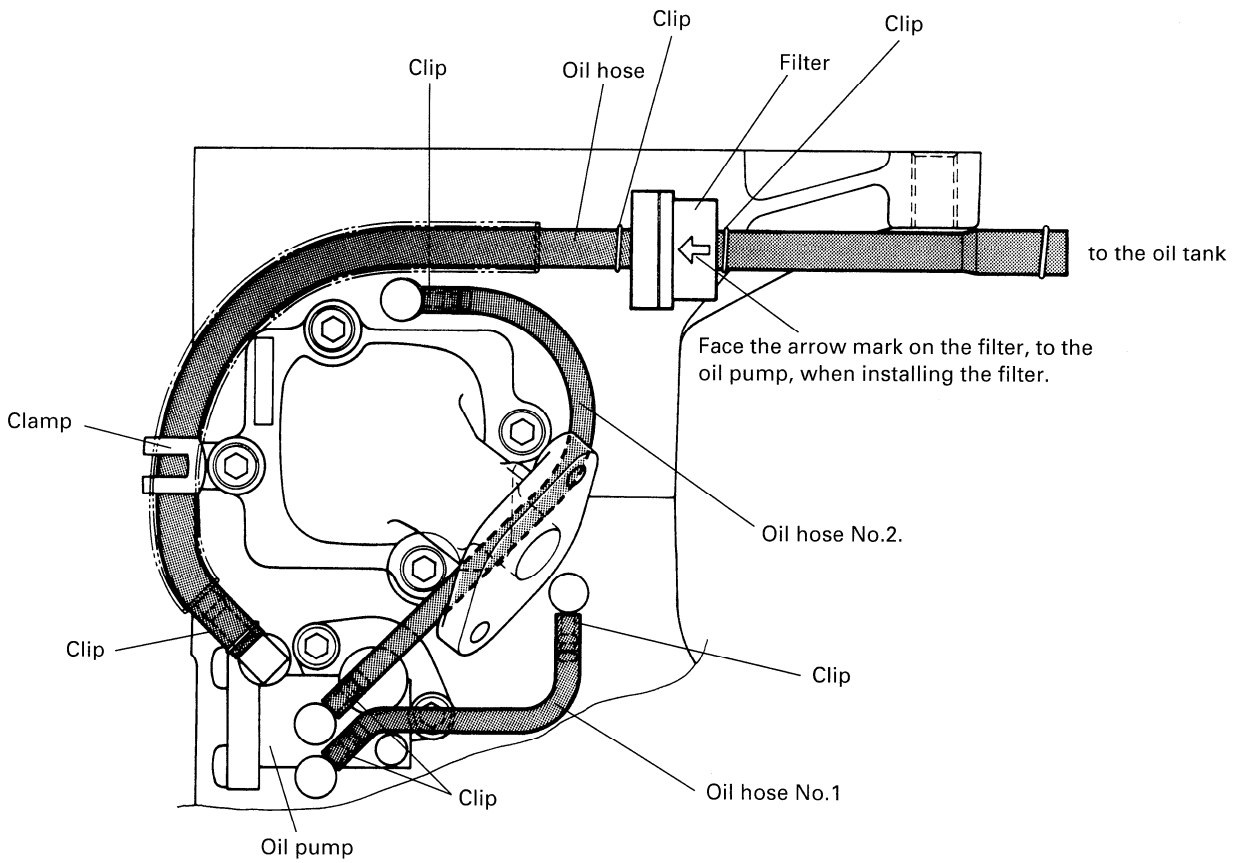




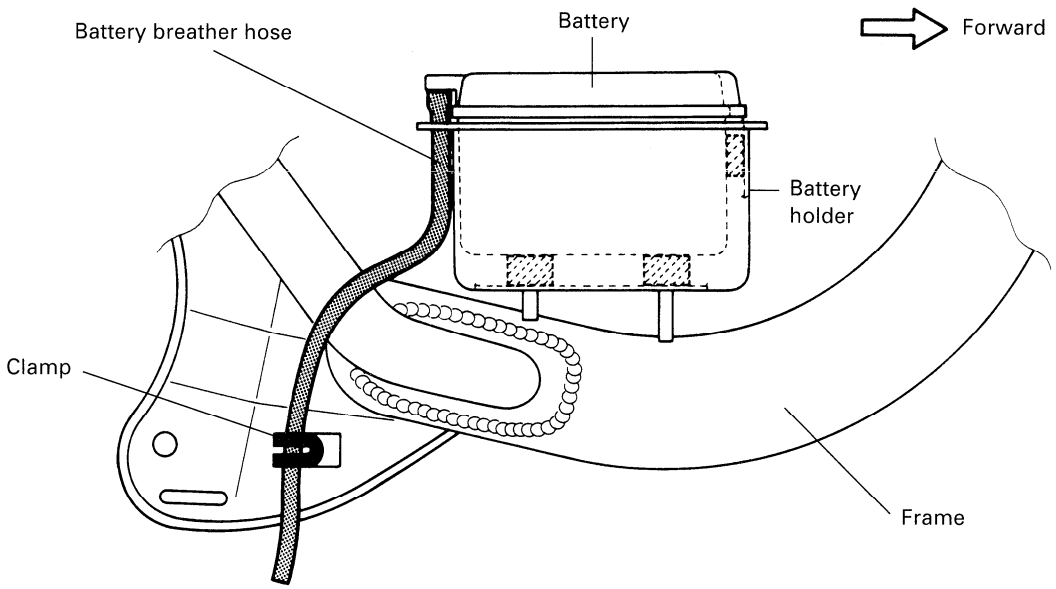
For the others



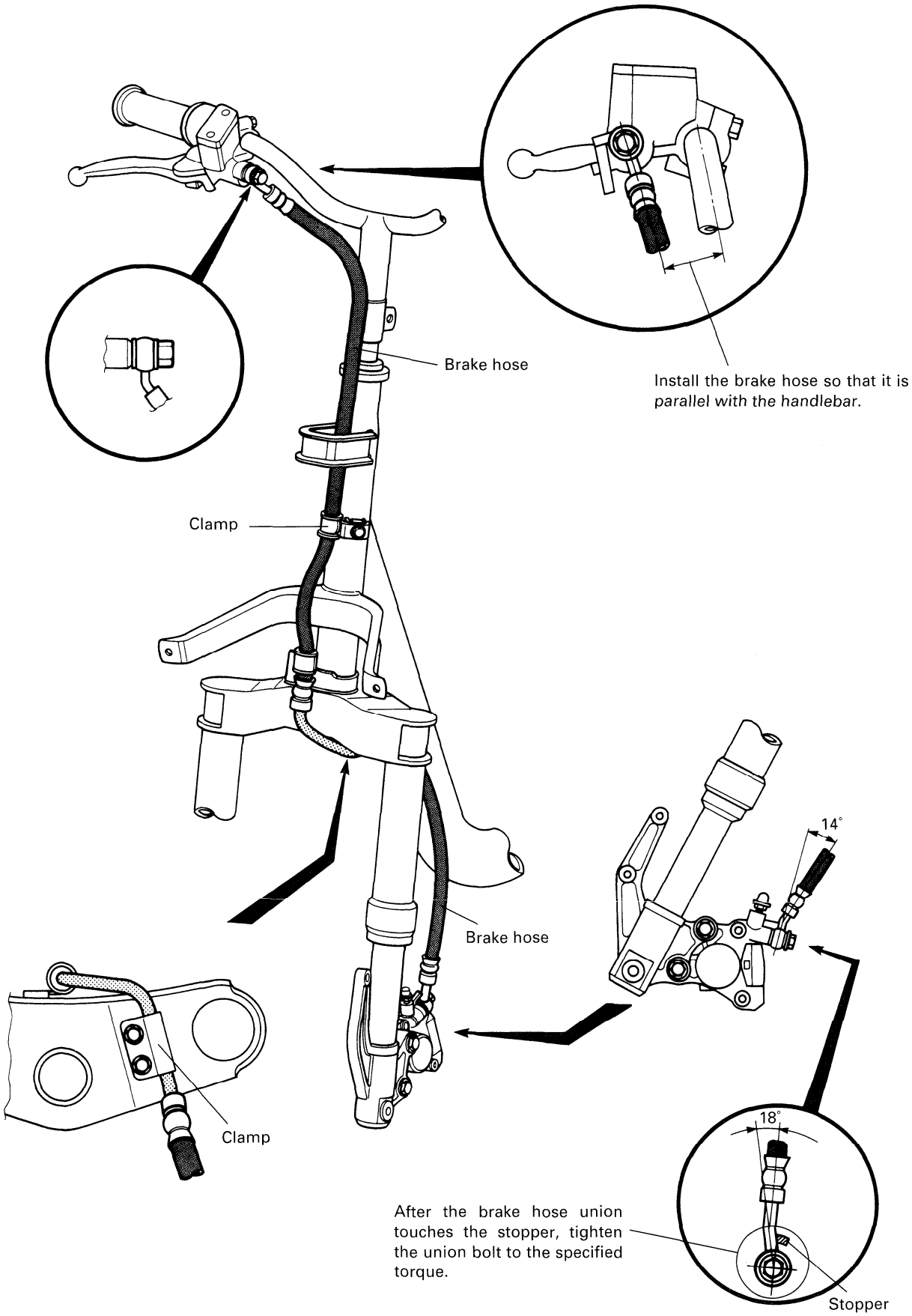
OIL HOSE ROUTING



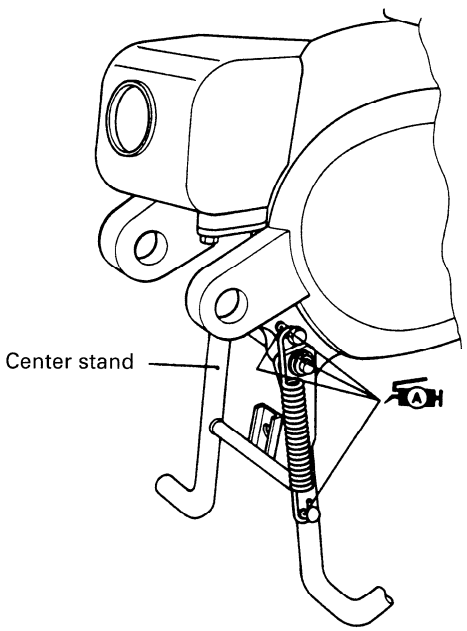
BATTERY BREATHER HOSE (For P-53)



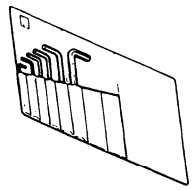
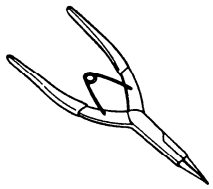
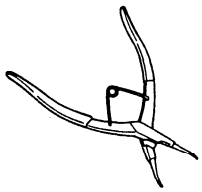
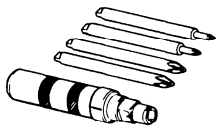
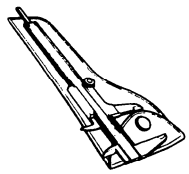
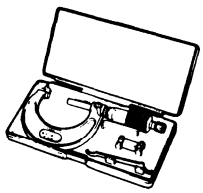
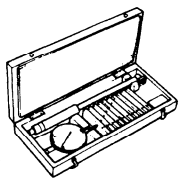
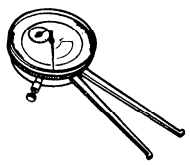
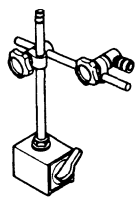
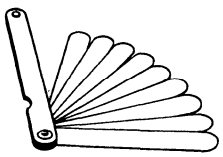
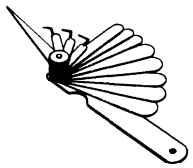
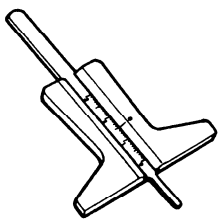
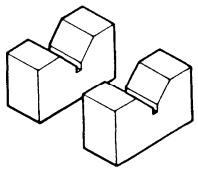
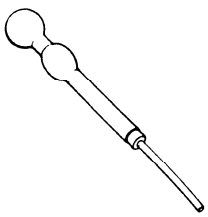
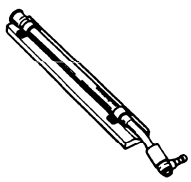
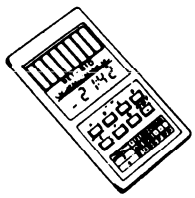
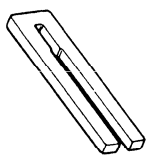
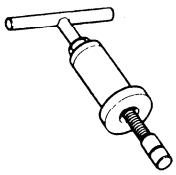
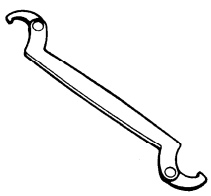
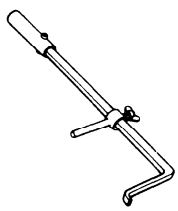
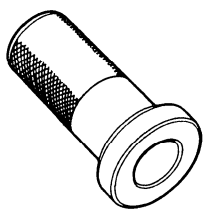
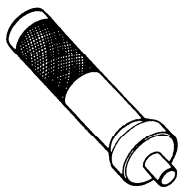
FRONT BRAKE HOSE ROUTING

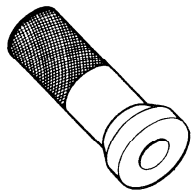
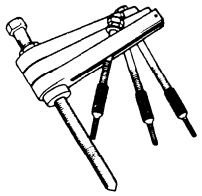
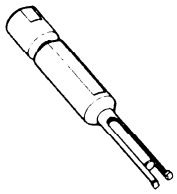
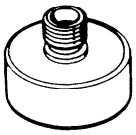
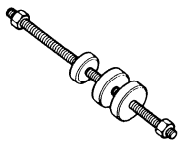
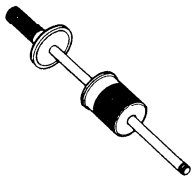
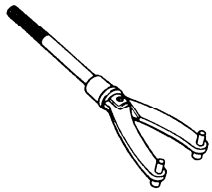
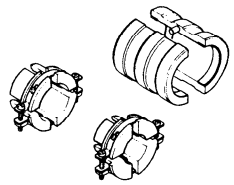
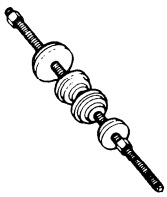
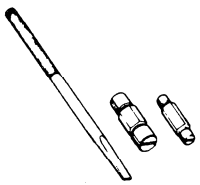
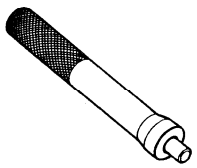
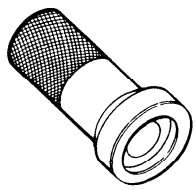


CENTER STAND SET-UP



SPECIAL TOOLS

 09900-00401 Hexagon wrench set	 09900-06107 Snap ring pliers	 09900-06108 Snap ring pliers	 09900-09003 Impact driver set	 09900-20101 Vernier calipers (150 mm)
 09900-20202 Micrometer (25–50 mm)	 09900-20205 Micrometer (0–25 mm)	 09900-20508 Cylinder bore gauge set	 09900-20605 Dial calipers	 09900-20606 Dial gauge (1/100 mm)
 09900-20701 Magnetic stand	 09900-20803 Thickness gauge	 09900-20804 Thickness gauge	 09900-20805 Tire depth gauge	 09900-21304 V-block (100 mm)
 09900-28403 Hydrometer	 09900-21602 CCI oil gauge	 09900-25002 Pocket tester	 09900-26006 Tachometer	 09910-20115 09910-20116 Conrod holder
 09910-32812 Crankshaft installer	 09910-60611 Universal clamp wrench	 09913-50121 Oil seal remover	 09913-75810 Bearing remover/ installer	 09913-75821 Bearing remover/ installer

 09913-76010 Bearing installer	 09920-13120 Crankcase separating tool	 09921-20210 Bearing remover	 09923-73210 Bearing remover	 09924-74510 Oil seal installer handle
 09924-74545 Oil seal installer attachment	 09924-84521 Bearing installer set	 09930-30102 Sliding shaft	 09930-40113 Rotor holder	 09940-52860 Front fork oil seal installer
 09941-34513 Bearing installer	 09941-50111 Bearing remover	 09941-74910 Bearing installer	 09943-88211 Bearing remover/ installer	 09951-16080 Bearing installer

TIGHTENING TORQUE

ENGINE

ITEM	N•m	kg-m	lb-ft
Cylinder head nut	10	1.0	7.0
Spark plug	28	2.8	20.0
Exhaust pipe bolt and nut	10	1.0	7.0
Engine mounting bracket nut	60	6.0	43.5
Engine mounting nut	60	6.0	43.5
Clutch housing nut	50	5.0	36.0
Kick starter nut	50	5.0	36.0
Magneto rotor nut	40	4.0	29.0
Clutch shoe nut	50	5.0	36.0
Kick starter lever bolt	10	1.0	7.0
Final gear oil drain bolt	5.5	0.55	4.0
Final gear oil level bolt	12	1.2	8.5
Oil pump mounting screw	4	0.4	3.0
Engine coolant temp. switch (AY50W)	13	1.3	9.5
Water pump impeller bolt (AY50W)	8	0.8	6.0

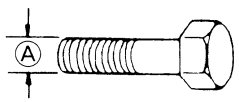
CHASSIS

ITEM	N•m	kg-m	lb-ft
Steering stem lock nut	30	3.0	21.5
Handlebar clamp nut	50	5.0	36.0
Handlebar set bolt	25	2.5	18.0
Front fork inner tube bolt	20	2.0	14.5
Front brake caliper mounting bolt	26	2.6	19.0
Front brake hose union bolt	23	2.3	16.5
Front brake caliper air bleeder valve	7.5	0.75	5.5
Front brake caliper housing bolt	25	2.5	18.0
Front brake disc bolt	23	2.3	16.5
Front brake master cylinder bolt	10	1.0	7.0
Front axle nut	42	4.2	30.5
Rear axle nut	75	7.5	54.0
Rear shock absorber bolt (upper)	29	2.9	21.0
Rear shock absorber nut (lower)	35	3.5	25.5
Rear brake cam lever nut	10	1.0	7.0

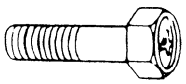
TIGHTENING TORQUE CHART

For other bolts and nuts not listed in the preceding page, refer to this chart:

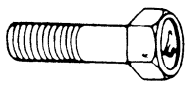
Bolt Diameter Ⓐ (mm)	Conventional or "4" marked bolt			"7" marked bolt		
	N•m	kg-m	lb-ft	N•m	kg-m	lb-ft
4	1.5	0.15	1.0	2.3	0.23	1.5
5	3	0.3	2.0	4.5	0.45	3.0
6	5.5	0.55	4.0	10	1.0	7.0
8	13	1.3	9.5	23	2.3	16.5
10	29	2.9	21.0	50	5.0	36.0
12	45	4.5	32.5	85	8.5	61.5
14	65	6.5	47.0	135	13.5	97.5
16	105	10.5	76.0	210	21.0	152.0
18	160	16.0	115.5	240	24.0	173.5



Conventional bolt



"4" marked bolt



"7" marked bolt

SERVICE DATA

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM		STANDARD			LIMIT
Piston to cylinder clearance	AY50	0.06—0.07 (0.0024—0.0028)			0.120 (0.0047)
	AY50W	0.035—0.045 (0.0014—0.0018)			0.120 (0.0047)
Cylinder bore	AY50	41.005—41.020 (1.6144—1.6150) Measure at 20 (0.8) from the top surface			41.075 (1.6171)
	AY50W	41.010—41.025 (1.6146—1.6152) Measure at 20 (0.8) from the top surface			41.105 (1.6183)
Piston diam.	AY50	40.940—40.955 (1.6118—1.6124) Measure at 15 (0.6) from the skirt end			40.885 (1.6096)
	AY50W	40.970—40.985 (1.6130—1.6136) Measure at 23 (0.9) from the skirt end			40.890 (1.6098)
Cylinder distortion		—			0.05 (0.002)
Cylinder head distortion		—			0.05 (0.002)
Piston ring free end gap	AY50	1st	R	Approx. 4.0 (0.16)	3.2 (0.126)
		2nd	R	Approx. 4.3 (0.17)	3.4 (0.134)
	AY50W	1st & 2nd	T	Approx. 4.5 (0.18)	3.6 (0.14)
			N	Approx. 3.0 (0.12)	2.4 (0.10)
Piston ring end gap	AY50	1st & 2nd	R	0.10—0.25 (0.004—0.010)	0.80 (0.031)
	AY50W	1st & 2nd	T&N	0.08—0.18 (0.0031—0.0071)	0.80 (0.031)
Piston ring to groove clearance	AY50	1st		0.03—0.07 (0.0012—0.0028)	—
		2nd		0.02—0.06 (0.0008—0.0024)	—
	AY50W	1st & 2nd		0.01—0.05 (0.0004—0.0020)	—
Piston pin bore	AY50	10.002—10.010 (0.3938—0.3941)			10.030 (0.3949)
	AY50W	12.002—12.010 (0.4725—0.4728)			12.030 (0.4736)
Piston pin O.D.	AY50	9.995—10.000 (0.3935—0.3937)			9.980 (0.3929)
	AY50W	11.996—12.000 (0.4723—0.4724)			11.980 (0.4717)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM		STANDARD	LIMIT
Conrod small end I.D	AY50	14.003—14.011 (0.5513—0.5516)	14.040 (0.5528)
	AY50W	16.003—16.011 (0.6300—0.6304)	16.040 (0.6315)
Conrod deflection		—	3.0 (0.12)
Crank web to web width	AY50	36.0 ± 0.05 (1.4173 ± 0.0020)	—
	AY50W	38.0 ± 0.05 (1.4961 ± 0.0020)	—
Crankshaft runout		—	0.05 (0.002)

OIL PUMP

ITEM		SPECIFICATION
Oil pump reduction ratio		30.000 (30/1)
Oil pump discharge rate	AY50	0.9—1.1 ml (0.032—0.039 Imp oz) for 5 minutes at 3 000 r/min.
	AY50W	0.8—1.0 ml (0.028—0.035 Imp oz) for 5 minutes at 3 000 r/min.

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch wheel I.D.	110.00—110.15 (4.331—4.337)	110.50 (4.350)
Clutch shoe thickness	3.0 (0.12)	2.0 (0.08)
Clutch engagement	3 300 ± 200 r/min.	—
Clutch lock-up	4 500 ± 300 r/min.	—

RADIATOR + ENGINE COOLANT TEMP. SWITCH AY50W

ITEM		STANDARD	LIMIT
Radiator reservoir cap valve opening pressure		100 kPa (1.0 kg/cm^2, 14.2 psi)	—
Engine coolant temp. switch operating temperature	ON	Approx. 117°C (242°F)	—
	OFF	Approx. 110°C (230°F)	—

TRANSMISSION

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Reduction ratio		Variable 2.768—0.871		———
Final reduction ratio	AY50	P-02,04,22,39	14.960 (51/15 × 66/15)	———
		P-26,34,37,53	12.800 (51/15 × 64/17)	———
	AY50W	P-02,04,22	14.960 (51/15 × 66/15)	———
		P-26,34,53	11.900 (51/15 × 63/18)	———
Drive belt width		16.9 (0.67)		16.0 (0.63)
Driven face spring free length	AY50	P-02,04, 22,37,39	110 (4.3)	104.5 (4.11)
		P-26,34,53	75.3 (2.96)	71.6 (2.82)
	AY50W	75.3 (2.96)		71.6 (2.82)

CARBURETOR
AY50

ITEM		SPECIFICATION		
		P-26,53	P-02	P-04
Carburetor type		KEIHIN PWS14	←	←
Bore size		14 mm	←	←
I.D. No.		35E0	35E2	35E3
Idle r/min.		1 700 ± 200 r/min.	←	←
Float height		5.1 ± 0.5 mm (0.20 ± 0.02 in)	←	←
Main jet	(M.J.)	#60	←	#58
Jet needle	(J.N.)	N4WA-3rd	←	N4TH-3rd
Pilot jet	(P.J.)	#45	←	#42
Air screw	(A.S.)	1⅜ turns back	←	2¼ turns back
Throttle cable play		3—6 mm (0.1—0.2 in)	←	←

ITEM		SPECIFICATION			
		P-22	P-34	P-37	P-39
Carburetor type		KEIHIN PWS14	KEIHIN PWS12	KEIHIN PWS14	←
Bore size		14 mm	12 mm	14 mm	←
I.D. No.		35E4	35E5	35E7	35EB
Idle r/min.		1 700 ± 200 r/min.	←	←	←
Float height		5.1 ± 0.5 mm (0.20 ± 0.02 in)	←	←	←
Main jet	(M.J.)	#55	←	#60	#55
Jet needle	(J.N.)	N4VJ-3rd	N4VJ-4th	N4WA-3rd	N5GJ-3rd
Pilot jet	(P.J.)	#42	#45	←	#35
Air screw	(A.S.)	1¼ turns back	1¾ turns back	1⅜ turns back	¾ turn back
Throttle cable play		3—6 mm (0.1—0.2 in)	←	←	←

CARBURETOR
AY50W

ITEM	SPECIFICATION		
	P-26,53	P-34	P-04
Carburetor type	KEIHIN PWS14	KEIHIN PWS12	KEIHINE PWS14
Bore size	14 mm	12 mm	14 mm
I.D. No.	35E1	35E6	35E8
Idle r/min.	1 700 ± 200 r/min.	←	←
Float height	5.1 ± 0.5 mm (0.20 ± 0.02 in)	←	←
Main jet (M.J.)	#60	#55	#58
Jet needle (J.N.)	N4WA-3rd	N4VJ-3rd	N4TH-3rd
Pilot jet (P.J.)	#48	←	#42
Air screw (A.S.)	1½ turns back	←	←
Throttle cable play	3—6 mm (0.1—0.2 in)	←	←

ITEM	SPECIFICATION	
	P-02	P-22
Carburetor type	KEIHIN PWS14	←
Bore size	14 mm	←
I.D. No.	35E9	35E4
Idle r/min.	1 700 ± 200 r/min.	←
Float height	5.1 ± 0.5 mm (0.20 ± 0.02 in)	←
Main jet (M.J.)	#60	#55
Jet needle (J.N.)	N4WA-3rd	N4VJ-3rd
Pilot jet (P.J.)	#45	#42
Air screw (A.S.)	1⅜ turns back	1¼ turns back
Throttle cable play	3—6 mm (0.1—0.2 in)	←

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	14° B.T.D.C. at 4 000 r/min.		
Spark plug	Type	NGK: BPR6HS ND: W20FPR-U BOSCH: WR7BC	AY50
	Gap	0.6—0.7 (0.024—0.028)	
	Type	NGK: BPR6HS ND: W20FPR	AY50W P-02,04,22,34
	Gap	0.6—0.7 (0.024—0.028)	
	Type	NGK: BPR7HS ND: W22FPR	AY50W P-26,53
	Gap	0.6—0.7 (0.024—0.028)	
Spark performance	Over 8 (0.3) at 1 atm.		

ITEM		SPECIFICATION		NOTE
Ignition coil resistance		Secondary	4—10 kΩ	Plug cap—B/W lead wire terminal
Magneto coil resistance		Charging	0.1—1.2 Ω	Y—Ground
		Pick-up	100—270 Ω	R—Ground
Regulated voltage		13.5—15.5 V at 5 000 r/min.		
Magneto Max. output		80 W at 5 000 r/min.		
Starter relay resistance		50—90 Ω		
Battery	Type designation	FB4L-B		P-53
		YT4L-BS		The others
	Capacity	12 V 14.4 kC (4 Ah)/10 HR		P-53
		12 V 10.8 kC (3 Ah)/10 HR		The others
	Standard electrolyte S.G.	1.280 at 20°C (68°F)		P-53
		1.320 at 20°C (68°F)		The others
Fuse size		10 A		

WATTAGE

Unit: W

ITEM	SPECIFICATION		
	P-02	P-39	The others
Headlight	15 × 2	←	←
Position light	3		
Brake light/Taillight	21/5	←	←
Turn signal light	10	←	←
Speedometer light	1.2 × 3	←	←
Turn signal indicator light	1.2	←	←
Oil level indicator light	1.2	←	←
Water temp. indicator light (AY50W)	1.2	←	←
Trunk light	2	←	←
License light		5	

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Brake lever play	Rear	15—25 (0.6—1.0)	—
Brake drum I.D.	Rear	—	120.7 (4.75)
Brake lining thickness	Rear	—	1.5 (0.06)
Brake disc thickness	Front	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.14)
Brake disc runout	Front	—	0.30 (0.012)
Master cylinder bore	Front	11.000—11.043 (0.4331—0.4348)	—
Master cylinder piston diam.	Front	10.957—10.984 (0.4314—0.4324)	—

ITEM	STANDARD		LIMIT
Brake caliper cylinder bore	Front	30.230—30.306 (1.1902—1.1931)	—
Brake caliper piston diam.	Front	30.150—30.200 (1.1870—1.1890)	—
Wheel rim runout	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
Wheel rim size	Front	J12 × MT3.50	—
	Rear	J12 × MT3.50	—
Tire size	Front	120/70-12 51J	—
	Rear	130/70-12 56J	—
Tire tread depth	Front	—	1.6 (0.06)
	Rear	—	1.6 (0.06)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	77 (3.0)	—	
Front fork spring free length	—	122 (4.8)	
Rear wheel travel	60 (2.4)	—	

TIRE PRESSURE
P-26, 34, 53

COLD INFLATION TIRE PRESSURE	SOLO RIDING		
	kPa	kg/cm²	psi
FRONT	125	1.25	18
REAR	175	1.75	25

The others

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
FRONT	125	1.25	18	125	1.25	18
REAR	175	1.75	25	230	2.30	33

FUEL + OIL + COOLANT

ITEM	SPECIFICATION	NOTE
Fuel type	Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.	
Fuel tank capacity	6.8 L (1.5 Imp gal)	
Engine oil type	Use SUZUKI CCI SUPER OIL. If they are not available, use a good quality 2-stroke oil rated FC under JASO classification.	
Engine oil tank capacity	1.2 L (1.1 Imp qt)	
Final gear oil type	SAE 10W/40	
Final gear oil capacity	130 ml (4.6 Imp oz)	
Brake fluid type	DOT 4	
Engine coolant type	Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50 : 50.	AY50W
Engine coolant including reserve	1 200 ml (1.1 Imp qt)	AY50W

AY50W/WW/WRW ('98-MODEL)

CONTENTS

NOTE:
Asterisk mark (*) indicates the New W-model specifications and service data.

SPECIFICATIONS

AY50W

DIMENSIONS AND DRY MASS

Overall length	1 885 mm (74.2 in) ... P-39 1 880 mm (74.0 in) ... P-22, 26 1 865 mm (73.4 in) ... The others
Overall width	650 mm (25.6 in)
Overall height	1 125 mm (44.3 in)
Wheelbase	1 260 mm (49.6 in)
Ground clearance	105 mm (4.1 in) ... P-04, 22 120 mm (4.7 in) ... The others
Seat height	790 mm (31.1 in)
Dry mass	77 kg (169 lbs)

ENGINE

Type	Two-stroke, forced air-cooled
Intake system	Reed valve
Number of cylinders	1
Bore	41.0 mm (1.614 in)
Stroke	37.4 mm (1.472 in)
Piston displacement	49 cm^3 (3.0 cu. in)
Corrected compression ratio	6.5 : 1 ... P-02, 22 7.3 : 1 ... The others
Carburetor	KEIHIN PWS12 ... P-34, 39 KEIHIN PWS14 ... The others
Air cleaner	Polyurethane foam element
Starter system	Electric and kick
Lubrication system	SUZUKI "CCI"

TRANSMISSION

Clutch	Dry shoe, automatic, centrifugal type
Gearshifting	Automatic, variable ratio
Reduction ratio	* Variable (2.768–1.192) ... P-04 Variable (2.768–0.871) ... The others
Final reduction ratio	14.960 (51/15) × (66/15) ... P-02,22,39 12.800 (51/15) × (64/17) ... The others
Drive system	V-belt drive

CHASSIS

Front suspension	Inverted telescopic, coil spring
Rear suspension	Swingarm type, coil spring, oil damped
Steering angle	45° (right & left)
Caster	25° 20'
Trail	76.7 mm (3.0 in)
Turning radius	1.9 m (6.2 ft)
Front brake	Disc brake
Rear brake	Internal expanding
Front tire size	120/70-12 51J
Rear tire size	130/70-12 56J

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	14° B.T.D.C. at 4 000 r/min
Spark plug	NGK BPR6HS, DENSO W20FPR-U or BOSCH WR7BC
Battery	12V 14.4 kC (4Ah)/10HR ... P-53 12V 10.8 kC (3Ah)/10HR ... The others
Generator	Magneto
Fuse	10A
Headlight	12V 15W × 2
Brake light/Taillight	12V 21/5W
Turn signal light	12V 10W

CAPACITIES

Fuel tank	6.8 L (1.5 Imp gal)
Engine oil tank	1.2 L (1.1 Imp qt)
Final gear oil	130 ml (4.6 Imp oz)

These specifications are subject to change without notice.

AY50WW
DIMENSIONS AND DRY MASS

Overall length	1 880 mm (74.0 in) ... P-22, 26
	1 865 mm (73.4 in) ... The others
Overall width	650 mm (25.6 in)
Overall height	1 125 mm (44.3 in)
Wheelbase	1 260 mm (49.6 in)
Ground clearance	105 mm (4.1 in) ... P-04, 22
	120 mm (4.7 in) ... The others
Seat height	790 mm (31.1 in)
Dry mass	80 kg (176 lbs)

ENGINE

Type	Two-stroke, liquid-cooled
Intake system	Reed valve
Number of cylinders	1
Bore	41.0 mm (1.614 in)
Stroke	37.4 mm (1.472 in)
Piston displacement	49 cm^3 (3.0 cu. in)
Corrected compression ratio	7.8 : 1 ... P-34
	8.0 : 1 ... P-26, 53
	8.1 : 1 ... The others
Carburetor	KEIHIN PWS12 ... P-34
	KEIHIN PWS14 ... The others
Air cleaner	Polyurethane foam element
Starter system	Electric and kick
Lubrication system	SUZUKI "CCI"

TRANSMISSION

Clutch	Dry shoe, automatic, centrifugal type
Gearshifting	Automatic, variable ratio
Reduction ratio	*Variable (2.885–1.228) ... P-04
	*Variable (2.885–0.838) ... P-26, 34, 53
	Variable (2.768–0.871) ... P-02, 22
Final reduction ratio	14.960
	(51/15) × (66/15) ... P-02,22
	*12.800
	(51/15) × (64/17) ... The others
Drive system	V-belt drive

CHASSIS

Front suspension	Inverted telescopic, coil spring
Rear suspension	Swingarm type, coil spring, oil damped
Steering angle	45° (right & left)
Caster	25° 20'
Trail	76.7 mm (3.0 in)
Turning radius	1.9 m (6.2 ft)
Front brake	Disc brake
Rear brake	Internal expanding
Front tire size	120/70-12 51J
Rear tire size	130/70-12 56J

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	14° B.T.D.C. at 4 000 r/min
Spark plug	NGK BPR7HS or DENSO W22FPR ... P-26, 53
	NGK BPR6HS or DENSO W20FPR ... The others
Battery	12V 14.4 kC (4Ah)/10HR ... P-53
	12V 10.8 kC (3Ah)/10HR ... The others
Generator	Magneto
Fuse	10A
Headlight	12V 15W × 2
Brake light/Taillight	12V 21/5W
Turn signal light	12V 10W

CAPACITIES

Fuel tank	6.8 L (1.5 Imp gal)
Engine oil tank	1.2 L (1.1 Imp qt)
Final gear oil	130 ml (4.6 Imp oz)
Engine coolant	1 200 ml (1.1 Imp qt)

These specifications are subject to change without notice.

AY50WRW

DIMENSIONS AND DRY MASS

Overall length	1 880 mm (74.0 in) ... P-22, 26
	1 865 mm (73.4 in) ... The others
Overall width	650 mm (25.6 in)
Overall height	1 125 mm (44.3 in)
Wheelbase	1 260 mm (49.6 in)
Ground clearance	105 mm (4.1 in) ... P-04, 22
	120 mm (4.7 in) ... The others
Seat height	790 mm (31.1 in)
Dry mass	81 kg (178 lbs)

ENGINE

Type	Two-stroke, liquid-cooled
Intake system	Reed valve
Number of cylinders	1
Bore	41.0 mm (1.614 in)
Stroke	37.4 mm (1.472 in)
Piston displacement	49 cm^3 (3.0 cu. in)
Corrected compression ratio	7.8 : 1 ... P-34
	8.0 : 1 ... P-26, 53
	8.1 : 1 ... The others
Carburetor	KEIHIN PWS12 ... P-34
	KEIHIN PWS14 ... The others
Air cleaner	Polyurethane foam element
Starter system	Electric and kick
Lubrication system	SUZUKI "CCI"

TRANSMISSION

Clutch	Dry shoe, automatic, centrifugal type
Gearshifting	Automatic, variable ratio
Reduction ratio	*Variable (2.885–1.228) ... P-04
	*Variable (2.885–0.838) ... P-26, 34, 53
	Variable (2.768–0.871) ... P-02, 22
Final reduction ratio	14.960 (51/15) × (66/15) ... P-02,22
	*12.800 (51/15) × (64/17) ... The others
Drive system	V-belt drive

CHASSIS

Front suspension	Inverted telescopic, coil spring
Rear suspension	Swingarm type, coil spring, oil damped
Steering angle	45° (right & left)
Caster	25° 20'
Trail	76.7 mm (3.0 in)
Turning radius	1.9 m (6.2 ft)
Front brake	Disc brake
Rear brake	Internal expanding
Front tire size	120/70-12 51J
Rear tire size	130/70-12 56J

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	14° B.T.D.C. at 4 000 r/min
Spark plug	NGK BPR7HS or DENSO W22FPR ... P-26, 53
	NGK BPR6HS or DENSO W20FPR ... The others
Battery	12V 14.4 kC (4Ah)/10HR ... P-53
	12V 10.8 kC (3Ah)/10HR ... The others
Generator	Magneto
Fuse	10A
Headlight	12V 15W × 2
Brake light/Taillight	12V 21/5W
Turn signal light	12V 10W

CAPACITIES

Fuel tank	6.8 L (1.5 Imp gal)
Engine oil tank	1.2 L (1.1 Imp qt)
Final gear oil	130 ml (4.6 Imp oz)
Engine coolant	1 200 ml (1.1 Imp qt)

These specifications are subject to change without notice.

SERVICE DATA

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM		STANDARD			LIMIT
Piston to cylinder clearance	AY50	0.06—0.07 (0.0024—0.0028)			0.120 (0.0047)
	AY50W AY50WR	0.035—0.045 (0.0014—0.0018)			0.120 (0.0047)
Cylinder bore	AY50	41.005—41.020 (1.6144—1.6150) Measure at 20 (0.8) from the top surface			41.075 (1.6171)
	AY50W AY50WR	41.010—41.025 (1.6146—1.6152) Measure at 20 (0.8) from the top surface			41.105 (1.6183)
Piston diam.	AY50	40.940—40.955 (1.6118—1.6124) Measure at 15 (0.6) from the skirt end			40.885 (1.6096)
	AY50W AY50WR	40.970—40.985 (1.6130—1.6136) Measure at 23 (0.9) from the skirt end			40.890 (1.6098)
Cylinder distortion		——			0.05 (0.002)
Cylinder head distortion		——			0.05 (0.002)
Piston ring free end gap	AY50	1st	R	Approx. 4.0 (0.16)	3.2 (0.126)
		2nd	R	Approx. 4.3 (0.17)	3.4 (0.134)
	AY50W AY50WR	1st & 2nd	T	Approx. 4.5 (0.18)	3.6 (0.14)
			N	Approx. 3.0 (0.12)	2.4 (0.10)
Piston ring end gap	AY50	1st & 2nd	R	0.10—0.25 (0.004—0.010)	0.80 (0.031)
	AY50W AY50WR	1st & 2nd	T&N	0.08—0.18 (0.0031—0.0071)	0.80 (0.031)
Piston ring to groove clearance	AY50	1st		0.03—0.07 (0.0012—0.0028)	——
		2nd		0.02—0.06 (0.0008—0.0024)	——
	AY50W AY50WR	1st & 2nd		0.01—0.05 (0.0004—0.0020)	——
Piston pin bore	AY50	10.002—10.010 (0.3938—0.3941)			10.030 (0.3949)
	AY50W AY50WR	12.002—12.010 (0.4725—0.4728)			12.030 (0.4736)
Piston pin O.D.	AY50	9.995—10.000 (0.3935—0.3937)			9.980 (0.3929)
	AY50W AY50WR	11.996—12.000 (0.4723—0.4724)			11.980 (0.4717)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM		STANDARD	LIMIT
Conrod small end I.D.	AY50	14.003—14.011 (0.5513—0.5516)	14.040 (0.5528)
	AY50W AY50WR	16.003—16.011 (0.6300—0.6304)	16.040 (0.6315)
Conrod deflection		—	3.0 (0.12)
Crank web to web width	AY50	36.0±0.05 (1.4173±0.0020)	—
	AY50W AY50WR	38.0±0.05 (1.4961±0.0020)	—
Crankshaft runout		—	0.05 (0.002)

OIL PUMP

ITEM		SPECIFICATION
Oil pump reduction ratio		30.000 (30/1)
Oil pump discharge rate	AY50	0.9—1.1 ml (0.032—0.039 Imp oz) for 5 minutes at 3 000 r/min.
	AY50W AY50WR	0.8—1.0 ml (0.028—0.035 Imp oz) for 5 minutes at 3 000 r/min.

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch wheel I.D.	110.00—110.15 (4.331—4.337)	110.50 (4.350)
Clutch shoe thickness	3.0 (0.12)	2.0 (0.08)
Clutch engagement	3 300±200 r/min.	—
Clutch lock-up	4 500±300 r/min.	—

RADIATOR + ENGINE COOLANT TEMP. SWITCH AY50W AND AY50WR

ITEM		STANDARD	LIMIT
Radiator reservoir cap valve opening pressure		100 kPa (1.0 kg/cm², 14.2 psi)	—
Engine coolant temp. switch operating temperature	ON	Approx. 117°C (242°F)	—
	OFF	Approx. 110°C (230°F)	—

TRANSMISSION

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Reduction ratio	AY50	P-04	*Variable 2.768—1.192	———
		The others	Variable 2.768—0.871	———
	AY50W AY50WR	P-04	*Variable 2.885—1.228	———
		P-26,34,53	*Variable 2.885—0.838	———
		P-02,22	Variable 2.768—0.871	———
Final reduction ratio	AY50	P-02,22,39	14.960 (51/15 × 66/15)	———
		P-04,26,34,53	12.800 (51/15 × 64/17)	———
	AY50W AY50WR	P-02,22	14.960 (51/15 × 66/15)	———
		P-04,26,34,53	*12.800 (51/15 × 64/17)	———
Drive belt width		16.9 (0.67)		16.0 (0.63)
Driven face spring free length	AY50	P-02,04,22,39	110 (4.3)	104.5 (4.11)
		P-26,34,53	75.3 (2.96)	71.6 (2.82)
	AY50W AY50WR	75.3 (2.96)		71.6 (2.82)

CARBURETOR
AY50

ITEM		SPECIFICATION		
		P-26,53	P-02	P-04
Carburetor type		KEIHIN PWS14	←	←
Bore size		14 mm	←	←
I.D. No.		35E0	35E2	35E3
Idle r/min.		1 700 ± 200 r/min.	←	←
Float height		5.1 ± 0.5 mm (0.20 ± 0.02 in)	←	←
Main jet	(M.J.)	#60	←	#58
Jet needle	(J.N.)	N4WA-3rd	←	N4TH-3rd
Pilot jet	(P.J.)	#45	←	#42
Air screw	(A.S.)	1⅜ turns back	←	2¼ turns back
Throttle cable play		3—6 mm (0.1—0.2 in)	←	←

ITEM		SPECIFICATION		
		P-22	P-34	P-39
Carburetor type		KEIHIN PWS14	KEIHIN PWS12	←
Bore size		14 mm	12 mm	←
I.D. No.		35E4	35E5	35EB
Idle r/min.		1 700 ± 200 r/min.	←	←
Float height		5.1 ± 0.5 mm (0.20 ± 0.02 in)	←	←
Main jet	(M.J.)	#55	←	←
Jet needle	(J.N.)	N4VJ-3rd	N4VJ-4th	N5GJ-3rd
Pilot jet	(P.J.)	#42	#45	#35
Air screw	(A.S.)	1¼ turns back	1¾ turns back	⅜ turn back
Throttle cable play		3—6 mm (0.1—0.2 in)	←	←

CARBURETOR
AY50W AND AY50WR

ITEM	SPECIFICATION		
	P-26,53	P-34	P-04
Carburetor type	KEIHIN PWS14	KEIHIN PWS12	KEIHINE PWS14
Bore size	14 mm	12 mm	14 mm
I.D. No.	35E1	35E6	35E8
Idle r/min.	1 700 ± 200 r/min.	←	←
Float height	5.1 ± 0.5 mm (0.20 ± 0.02 in)	←	←
Main jet (M.J.)	#60	#55	#58
Jet needle (J.N.)	N4WA-3rd	N4VJ-3rd	N4TH-3rd
Pilot jet (P.J.)	#48	←	#42
Air screw (A.S.)	1½ turns back	←	←
Throttle cable play	3—6 mm (0.1—0.2 in)	←	←

ITEM	SPECIFICATION	
	P-02	P-22
Carburetor type	KEIHIN PWS14	←
Bore size	14 mm	←
I.D. No.	35E9	35E4
Idle r/min.	1 700 ± 200 r/min.	←
Float height	5.1 ± 0.5 mm (0.20 ± 0.02 in)	←
Main jet (M.J.)	#60	#55
Jet needle (J.N.)	N4WA-3rd	N4VJ-3rd
Pilot jet (P.J.)	#45	#42
Air screw (A.S.)	1⅜ turns back	1¼ turns back
Throttle cable play	3—6 mm (0.1—0.2 in)	←

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	14° B.T.D.C. at 4 000 r/min.		
Spark plug	Type	NGK: BPR6HS DENSO: W20FPR-U BOSCH: WR7BC	AY50
	Gap	0.6—0.7 (0.024—0.028)	
	Type	NGK: BPR6HS DENSO: W20FPR	AY50W AY50WR P-02,04,22,34
	Gap	0.6—0.7 (0.024—0.028)	
	Type	NGK: BPR7HS DENSO: W22FPR	AY50W AY50WR P-26,53
	Gap	0.6—0.7 (0.024—0.028)	
Spark performance	Over 8 (0.3) at 1 atm.		

ITEM		SPECIFICATION		NOTE
Ignition coil resistance		Secondary	4—10 kΩ	Plug cap—B/W lead wire terminal
Magneto coil resistance		Charging	0.1—1.2 Ω	Y—Ground
		Pick-up	100—270 Ω	R—Ground
Regulated voltage		13.5—15.5 V at 5 000 r/min.		
Magneto Max. output		80 W at 5 000 r/min.		
Starter relay resistance		50—90 Ω		
Battery	Type designation	FB4L-B		P-53
		YT4L-BS		The others
	Capacity	12 V 14.4 kC (4 Ah)/10 HR		P-53
		12 V 10.8 kC (3 Ah)/10 HR		The others
	Standard electrolyte S.G.	1.280 at 20°C (68°F)		P-53
		1.320 at 20°C (68°F)		The others
Fuse size		10 A		

WATTAGE

Unit: W

ITEM	SPECIFICATION		
	P-02	P-39	The others
Headlight	15 x 2	←	←
Position light	3		
Brake light/Taillight	21/5	←	←
Turn signal light	10	←	←
Speedometer light	1.2 x 3	←	←
Turn signal indicator light	1.2	←	←
Oil level indicator light	1.2	←	←
Water temp. indicator light (AY50W and AY50WR)	1.2	←	←
Trunk light	2	←	←
License light		5	

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Brake lever play	Rear	15—25 (0.6—1.0)	—
Brake drum I.D.	Rear	—	120.7 (4.75)
Brake lining thickness	Rear	—	1.5 (0.06)
Brake disc thickness	Front	4.0±0.2 (0.157±0.008)	3.5 (0.14)
Brake disc runout	Front	—	0.30 (0.012)
Master cylinder bore	Front	11.000—11.043 (0.4331—0.4348)	—
Master cylinder piston diam.	Front	10.957—10.984 (0.4314—0.4324)	—

ITEM	STANDARD		LIMIT
Brake caliper cylinder bore	Front	30.230—30.306 (1.1902—1.1931)	———
Brake caliper piston diam.	Front	30.150—30.200 (1.1870—1.1890)	———
Wheel rim runout	Axial	———	2.0 (0.08)
	Radial	———	2.0 (0.08)
Wheel axle runout	Front	———	0.25 (0.010)
Wheel rim size	Front	J12 × MT3.50	———
	Rear	J12 × MT3.50	———
Tire size	Front	120/70-12 51J	———
	Rear	130/70-12 56J	———
Tire tread depth	Front	———	1.6 (0.06)
	Rear	———	1.6 (0.06)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	77 (3.0)	———	
Front fork spring free length	———	122 (4.8)	
Rear wheel travel	60 (2.4)	———	

TIRE PRESSURE
P-26, 34, 53

COLD INFLATION TIRE PRESSURE	SOLO RIDING		
	kPa	kg/cm²	psi
FRONT	125	1.25	18
REAR	175	1.75	25

The others

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
FRONT	125	1.25	18	125	1.25	18
REAR	175	1.75	25	230	2.30	33

FUEL + OIL + COOLANT

ITEM	SPECIFICATION	NOTE
Fuel type	Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.	
Fuel tank capacity	6.8 L (1.5 Imp gal)	
Engine oil type	Use SUZUKI CCI SUPER OIL. If they are not available, use a good quality 2-stroke oil rated FC under JASO classification.	
Engine oil tank capacity	1.2 L (1.1 Imp qt)	
Final gear oil type	SAE 10W/40	
Final gear oil capacity	130 ml (4.6 Imp oz)	
Brake fluid type	DOT 4	
Engine coolant type	Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50 : 50.	AY50W AY50WR
Engine coolant including reserve	1 200 ml (1.1 Imp qt)	AY50W AY50WR

AY50X/WX/WRX ('99-MODEL)
AY50Y/WY/WRY ('00-MODEL)

This chapter describes service data, servicing procedures which differ from those of the AY50W/WW/WRW ('98-MODEL).

NOTE:

* *Any differences between AY50W/WW/WRW ('98-MODEL) and AY50X,Y/WX,WY/WRX,WRY ('99 and '00-models) in specifications and service data are clearly indicated with the asterisk marks (*).*
* *Please refer to the chapters 1 through 9 for details which are not given in this chapter.*

CONTENTS

COUNTRY OR AREA

P-02: U.K.
P-04: France
P-18: Swiss
P-22: Germany
P-26: Denmark
P-34: Italy
P-39: Austria
P-53: Spain

SPECIFICATIONS

AY50X/Y

DIMENSIONS AND DRY MASS

Overall length	1 885 mm ... P-39 1 880 mm ... P-22, 26 1 865 mm ... The others
Overall width	650 mm
Overall height	1 125 mm
Wheelbase	1 260 mm
Ground clearance	105 mm ... P-04, 22 120 mm ... The others
Seat height	790 mm
Dry mass	77 kg

ENGINE

Type	Two-stroke, forced air-cooled
Intake system	Reed valve
Number of cylinders	1
Bore	41.0 mm
Stroke	37.4 mm
Piston displacement	49 cm^3
Corrected compression ratio	6.5 : 1 ... P-02, 22 7.3 : 1 ... The others
Carburetor	KEIHIN PWS12 ... P-34, 39 KEIHIN PWS14 ... The others
Air cleaner	Polyurethane foam element
Starter system	Electric and kick
Lubrication system	SUZUKI "CCI"

TRANSMISSION

Clutch	Dry shoe, automatic, centrifugal type
Gearshifting	Automatic, variable ratio
Reduction ratio	* Variable (2.768–0.871) ... P-02, 22, 39 * Variable (2.975–1.140) ... The others
Final reduction ratio	14.960 (51/15) × (66/15) ... P-02, 22, 39 * 13.812 (51/15) × (65/16) ... The others
Drive system	V-belt drive

CHASSIS

Front suspension	Inverted telescopic, coil spring
Rear suspension	Swingarm type, coil spring, oil damped
Steering angle	45° (right & left)
Caster	25° 20'
Trail	76.7 mm
Turning radius	1.9 m
Front brake	Disc brake
Rear brake	Internal expanding
Front tire size	120/70-12 51L
Rear tire size	130/70-12 56L

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Spark plug	* NGK BPR7HS, DENSO W22FPR ... P-04, 26, 34, 53 NGK BPR6HS, DENSO W20FPR-U or BOSCH WR7BC ... The others
Battery	12V 14.4 kC (4Ah)/10HR ... P-53 12V 10.8 kC (3Ah)/10HR ... The others
Generator	Magneto
Fuse	10A
Headlight	12V 15W × 2
Brake light/Taillight	12V 21/5W
Turn signal light	12V 10W

CAPACITIES

Fuel tank	6.8 L
Engine oil tank	1.2 L
Final gear oil	130 ml

These specifications are subject to change without notice.

AY50WX/WY

DIMENSIONS AND DRY MASS

Overall length	1 905 mm ... P-39 1 865 mm ... The others
Overall width	650 mm
Overall height	1 125 mm
Wheelbase	1 260 mm
Ground clearance	105 mm ... P-04, 22 120 mm ... The others
Seat height	790 mm
Dry mass	82 kg

ENGINE

Type	Two-stroke, liquid-cooled
Intake system	Reed valve
Number of cylinders	1
Bore	41.0 mm
Stroke	37.4 mm
Piston displacement	49 cm^3
Corrected compression ratio	7.9 : 1 ... P-39 8.0 : 1 ... P-04, 26, 53 8.1 : 1 ... P-02, 22
Carburetor	KEIHIN PWS12 ... P-34, 39 KEIHIN PWS14 ... The others
Air cleaner	Polyurethane foam element
Starter system	Electric and kick
Lubrication system	SUZUKI "CCI"

TRANSMISSION

Clutch	Dry shoe, automatic, centrifugal type
Gearshifting	Automatic, variable ratio
Reduction ratio	* Variable (2.975–0.781) ... P-02, 22, 39 * Variable (2.975–1.140) ... The others
Final reduction ratio	* 16.271 (51/15) × (67/14) ... P-02, 22, 39 * 13.812 (51/15) × (65/16) ... The others
Drive system	V-belt drive

CHASSIS

Front suspension	Inverted telescopic, coil spring
Rear suspension	Swingarm type, coil spring, oil damped
Steering angle	45° (right & left)
Caster	25° 20'
Trail	76.7 mm
Turning radius	1.9 m
Front brake	Disc brake
Rear brake	* Disc brake
Front tire size	120/70-12 51L
Rear tire size	* 130/60-13 M/C 53L

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Spark plug	NGK BPR7HS or DENSO W22FPR ... P-04, 26, 34, 53 NGK BPR6HS or DENSO W20FPR ... The others
Battery	12V 14.4 kC (4Ah)/10HR ... P-53 12V 10.8 kC (3Ah)/10HR ... The others
Generator	Magneto
Fuse	10A
Headlight	12V 15W × 2
Brake light/Taillight	12V 21/5W
Turn signal light	12V 10W

CAPACITIES

Fuel tank	6.8 L
Engine oil tank	1.2 L
Final gear oil	130 ml
Engine coolant	1 200 ml

These specifications are subject to change without notice.

AY50WRX/WRY

DIMENSIONS AND DRY MASS

Overall length	1 865 mm
Overall width	650 mm
Overall height	1 125 mm
Wheelbase	1 260 mm
Ground clearance	105 mm ... P-04, 22
	120 mm ... The others
Seat height	790 mm
Dry mass	*83 kg

ENGINE

Type	Two-stroke, liquid-cooled
Intake system	Reed valve
Number of cylinders	1
Bore	41.0 mm
Stroke	37.4 mm
Piston displacement	49 cm^3
Corrected compression ratio	8.1 : 1 ... P-02, 22
	8.0 : 1 ... The others
Carburetor	KEIHIN PWS12 ... P-34
	KEIHIN PWS14 ... The others
Air cleaner	Polyurethane foam element
Starter system	Electric and kick
Lubrication system	SUZUKI "CCI"

TRANSMISSION

Clutch	Dry shoe, automatic, centrifugal type
Gearshifting	Automatic, variable ratio
Reduction ratio	*Variable (2.975–0.781) ... P-02, 22
	*Variable (2.975–1.140) ... The others
Final reduction ratio	*16.271 (51/15) × (67/14) ... P-02, 22
	*13.812 (51/15) × (65/16) ... The others
Drive system	V-belt drive

CHASSIS

Front suspension	Inverted telescopic, coil spring
Rear suspension	Swingarm type, coil spring, oil damped
Steering angle	45° (right & left)
Caster	25° 20'
Trail	76.7 mm
Turning radius	1.9 m
Front brake	Disc brake
Rear brake	*Disc brake
Front tire size	120/70-12 51L
Rear tire size	*130/60-13 M/C 53L

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Spark plug	NGK BPR7HS or DENSO W22FPR ... P-04, 26, 34, 53
	NGK BPR6HS or DENSO W20FPR ... The others
Battery	12V 14.4 kC (4Ah)/10HR ... P-53
	12V 10.8 kC (3Ah)/10HR ... The others
Generator	Magneto
Fuse	10A
Headlight	12V 15W × 2
Brake light/Taillight	12V 21/5W
Turn signal light	12V 10W

CAPACITIES

Fuel tank	6.8 L
Engine oil tank	1.2 L
Final gear oil	130 ml
Engine coolant	1 200 ml

These specifications are subject to change without notice.

SERVICE DATA

AY50X/Y

CYLINDER + PISTON + PISTON RING

Unit: mm

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.06—0.07			0.120
Cylinder bore	41.005—41.020 Measure at 20 mm from the top surface			41.075
Piston diam.	40.940—40.955 Measure at 15 mm from the skirt end			40.885
Cylinder distortion	——			0.05
Cylinder head distortion	——			0.05
Piston ring free end gap	1st	R	Approx. 4.0	3.2
	2nd	R	Approx. 4.3	3.4
Piston ring end gap	1st & 2nd	R	0.10—0.25	0.80
Piston ring to groove clearance	1st		0.03—0.07	——
	2nd		0.02—0.06	——
Piston pin bore	10.002—10.010			10.030
Piston pin O.D.	9.995—10.000			9.980

CONROD + CRANKSHAFT

Unit: mm

ITEM	STANDARD	LIMIT
Conrod small end I.D.	14.003—14.011	14.040
Conrod deflection	——	3.0
Crank web to web width	36.0±0.05	——
Crankshaft runout	——	0.05

OIL PUMP

ITEM	SPECIFICATION
Oil pump reduction ratio	30.000 (30/1)
Oil pump discharge rate	0.9—1.1 ml for 5 minutes at 3 000 r/min.

CLUTCH

Unit: mm

ITEM		STANDARD	LIMIT
Clutch wheel I.D.		110.00—110.15	110.50
Clutch shoe thickness		3.0	2.0
Clutch engagement	P-02,22,39	3 300±200 r/min.	——
	P-04,26, 34,53	*4 400±200 r/min	——
Clutch lock-up	P-02,22,39	4 500±300 r/min.	——
	P-04,26 34,53	*6 000±300 r/min.	——

TRANSMISSION

Unit: mm Except ratio

ITEM	STANDARD		LIMIT
Reduction ratio	P-02,22,39	Variable 2.768–0.871	———
	P-04,26,34,53	*Variable 2.975–1.140	———
Final reduction ratio	P-02,22,39	14.960 (51/15 × 66/15)	———
	P-04,26,34,53	*13.812 (51/15 × 65/16)	———
Drive belt width	P-02,22,39	16.9	15.9
	P-04,26,34,53	*18.4	*17.4
Driven face spring free length	110		104.5

CARBURETOR

ITEM		SPECIFICATION		
		P-04,26,53	P-02	P-22
Carburetor type		KEIHIN PWS14	←	←
Bore size		14 mm	←	←
I.D. No.		*35EE	35E2	35E4
Idle r/min.		*1 900 ± 200 r/min.	1 700 ± 200 r/min.	←
Float height		5.1 ± 0.5 mm	←	←
Main jet	(M.J.)	*#70	#60	#55
Jet needle	(J.N.)	N4WA-3rd	←	N4VJ-3rd
Pilot jet	(P.J.)	*#48	#45	#42
Air screw	(A.S.)	*1 ¼ turns back	1 3/8 turns back	1 ¼ turns back
Throttle cable play		2–4 mm	←	←

ITEM		SPECIFICATION		
		P-34 (X-Model)	P-34 (Y-Model)	P-39
Carburetor type		KEIHIN PWS12	←	←
Bore size		12 mm	←	←
I.D. No.		*35EF	*35EG	35EB
Idle r/min.		*1 900 ± 200 r/min.	←	1 700 ± 200 r/min.
Float height		5.1 ± 0.5 mm	←	←
Main jet	(M.J.)	*#82	*#65	#55
Jet needle	(J.N.)	*6LQJ-3rd	*6LQJ-5th	N5GJ-3rd
Pilot jet	(P.J.)	#45	←	#35
Air screw	(A.S.)	*1 1/8 turns back	*3 turns back	3/8 turn back
Throttle cable play		2–4 mm	←	←

ELECTRICAL

Unit: mm

ITEM		SPECIFICATION		NOTE
Spark plug		Type	NGK: BPR6HS DENSO: W20FPR-U BOSCH: WR7BC	P-02,22,39
		Gap	0.6—0.7	
		Type	NGK: BPR7HS DENSO: W22FPR	P-04,26,34,53
		Gap	0.6—0.7	
Spark performance		Over 8 at 1 atm.		
Ignition coil resistance		Secondary	4—10 kΩ	Plug cap—B/W lead wire terminal
Magneto coil resistance		Charging	0.1—1.2 Ω	Y—Ground
		Pick-up	100—270 Ω	R—Ground
Regulated voltage		13.5—15.5 V at 5 000 r/min.		
Magneto Max. output		80 W at 5 000 r/min.		
Starter relay resistance		50—90 Ω		
Battery	Type designation	FB4L-B		P-53
		YT4L-BS		The others
	Capacity	12 V 14.4 kC (4 Ah)/10 HR		P-53
		12 V 10.8 kC (3 Ah)/10 HR		The others
	Standard electrolyte S.G.	1.280 at 20°C		P-53
Fuse size		10 A		

WATTAGE

Unit: W

ITEM	SPECIFICATION		
	P-02	P-39	The others
Headlight	15 × 2	←	←
Position light	3		
Brake light/Taillight	21/5	←	←
Turn signal light	10	←	←
Speedometer light	1.2 × 3	←	←
Turn signal indicator light	2	←	←
Oil level indicator light	2	←	←
Trunk light	2	←	←
License light		5	

BRAKE + WHEEL

Unit: mm

ITEM	STANDARD		LIMIT
Brake lever play	Rear	15—20	—
Brake drum I.D.	Rear	—	120.7
Brake disc thickness	Front	4.0±0.2	3.5
Brake disc runout	Front	—	0.30
Master cylinder bore	Front	11.000—11.043	—
Master cylinder piston diam.	Front	10.957—10.984	—

ITEM	STANDARD/SPECIFICATION		LIMIT
Brake caliper cylinder bore	Front	30.230—30.306	———
Brake caliper piston diam.	Front	30.150—30.200	———
Brake fluid type	DOT 4		———
Wheel rim runout	Axial	———	2.0
	Radial	———	2.0
Wheel axle runout	Front	———	0.25
Wheel rim size	Front	J12 × MT3.50	———
	Rear	J12 × MT3.50	———
Tire size	Front	120/70-12 51L	———
	Rear	130/70-12 56L	———
Tire tread depth	Front	———	1.6
	Rear	———	1.6

SUSPENSION

Unit: mm

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	77	———	
Front fork spring free length	124.7	122	
Rear wheel travel	60	———	

TIRE PRESSURE
P-26, 34

COLD INFLATION TIRE PRESSURE	SOLO RIDING		
	kPa	kgf/cm²	psi
FRONT	125	1.25	18
REAR	175	1.75	25

The others

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kgf/cm²	psi	kPa	kgf/cm²	psi
FRONT	125	1.25	18	125	1.25	18
REAR	175	1.75	25	230	2.30	33

FUEL + OIL

ITEM	SPECIFICATION	NOTE
Fuel type	Gasoline used should be graded 91 octane or higher. An unleaded gasoline is recommended.	
Fuel tank capacity	6.8 L	
Engine oil type	Use SUZUKI CCI SUPER OIL. If they are not available, use a good quality 2-stroke oil rated FC under JASO classification.	
Engine oil tank capacity	1.2 L	
Final gear oil type	SAE 10W/40	
Final gear oil capacity	130 ml	

AY50WX/WRX/WY/WRY

CYLINDER + PISTON + PISTON RING

Unit: mm

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.035—0.045			0.120
Cylinder bore	41.010—41.025 Measure at 20 mm from the top surface			41.105
Piston diam.	40.970—40.985 Measure at 23 mm from the skirt end			40.890
Cylinder distortion	——			0.05
Cylinder head distortion	——			0.05
Piston ring free end gap	1st & 2nd	T	Approx. 4.5	3.6
		N	Approx. 3.0	2.4
Piston ring end gap	1st & 2nd	T&N	0.08—0.18	0.80
Piston ring to groove clearance	1st & 2nd		0.01—0.05	——
Piston pin bore	12.002—12.010			12.030
Piston pin O.D.	11.996—12.000			11.980

CONROD + CRANKSHAFT

Unit: mm

ITEM	STANDARD	LIMIT
Conrod small end I.D.	16.003—16.011	16.040
Conrod deflection	——	3.0
Crank web to web width	38.0±0.05	——
Crankshaft runout	——	0.05

OIL PUMP

ITEM	SPECIFICATION
Oil pump reduction ratio	30.000 (30/1)
Oil pump discharge rate	0.8—1.0 ml for 5 minutes at 3 000 r/min.

CLUTCH

Unit: mm

ITEM		STANDARD	LIMIT
Clutch wheel I.D.		110.00—110.15	110.50
Clutch shoe thickness		3.0	2.0
Clutch engagement	P-02,18, 22,39	*4 000±200 r/min.	——
	P-04,26, 34,53	*4 400±200 r/min.	——
Clutch lock-up	P-02,18, 22,39	*5 600±300 r/min.	——
	P-04,26, 34,53	*6 000±300 r/min.	——

RADIATOR + ENGINE COOLANT TEMP. SWITCH + ENGINE COOLANT

ITEM		STANDARD/SPECIFICATION	LIMIT
Radiator reservoir cap valve opening pressure		100 kPa (1.0 kgf/cm²)	———
Engine coolant temp. switch operating temperature	ON	Approx. 117°C	———
	OFF	Approx. 110°C	———
Engine coolant type		Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50 : 50.	———
Engine coolant including reserve		1 200 ml	———

TRANSMISSION

Unit: mm Except ratio

ITEM	STANDARD		LIMIT
Reduction ratio	P-02,18,22,39	*Variable 2.975–0.781	———
	P-04,26,34,53	*Variable 2.975–1.140	———
Final reduction ratio	P-02,18,22,39	*16.271 (51/15 × 67/14)	———
	P-04,26,34,53	*13.812 (51/15 × 65/16)	———
Drive belt width	*18.4		*17.4
Driven face spring free length	110		104.5

CARBURETOR

ITEM		SPECIFICATION		
		P-34 (X-Model)	P-34 (Y-Model)	P-18,39
Carburetor type		KEIHIN PWS12	←	←
Bore size		12 mm	←	←
I.D. No.		*35ED	*35EH	35EB
Idle r/min.		*1 900 ± 200 r/min.	←	1 700 ± 200 r/min.
Float height		5.1 ± 0.5 mm	←	←
Main jet	(M.J.)	*#82	*#65	#55
Jet needle	(J.N.)	*6LQJ-3rd	*6LQJ-5th	N5GJ-3rd
Pilot jet	(P.J.)	*#45	←	#35
Air screw	(A.S.)	*1 1/8 turns back	*2 turns back	3/8 turn back
Throttle cable play		2–4 mm	←	←

ITEM		SPECIFICATION		
		P-04, 26, 53	P-02	P-22
Carburetor type		KEIHIN PWS14	←	←
Bore size		14 mm	←	←
I.D. No.		*35EC	35E9	35E4
Idle r/min.		*1 900 ± 200 r/min.	1 700 ± 200 r/min.	←
Float height		5.1 ± 0.5 mm	←	←
Main jet	(M.J.)	*#68	#60	#55
Jet needle	(J.N.)	*N4WA-4th	N4WA-3rd	N4VJ-3rd
Pilot jet	(P.J.)	#48	#45	#42
Air screw	(A.S.)	*1 3/4 turns back	1 3/8 turns back	1 1/4 turns back
Throttle cable play		2–4 mm	←	←

ELECTRICAL

Unit: mm

ITEM		SPECIFICATION		NOTE
Spark plug		Type	NGK: BPR6HS DENSO: W20FPR	P-02,18,22,39
		Gap	0.6—0.7	
		Type	NGK: BPR7HS DENSO: W22FPR	P-04,26,34,53
		Gap	0.6—0.7	
Spark performance		Over 8 at 1 atm.		
Ignition coil resistance		Secondary	4—10 kΩ	Plug cap—B/W lead wire terminal
Magneto coil resistance		Charging	0.1—1.2 Ω	Y—Ground
		Pick-up	100—270 Ω	R—Ground
Regulated voltage		13.5—15.5 V at 5 000 r/min.		
Magneto Max. output		80 W at 5 000 r/min.		
Starter relay resistance		50—90 Ω		
Battery	Type designation	FB4L-B		P-53
		YT4L-BS		The others
	Capacity	12 V 14.4 kC (4 Ah)/10 HR		P-53
		12 V 10.8 kC (3 Ah)/10 HR		The others
	Standard electrolyte S.G.	1.280 at 20°C		P-53
Fuse size		10 A		

WATTAGE

Unit: W

ITEM	SPECIFICATION		
	P-02	P-18,39	The others
Headlight	15 × 2	←	←
Position light	3		
Brake light/Taillight	21/5	←	←
Turn signal light	10	←	←
Speedometer light	1.2 × 3	←	←
Turn signal indicator light	2	←	←
Oil level indicator light	2	←	←
Water temp. indicator light	2	←	←
Trunk light	2	←	←
License light		5	

BRAKE + WHEEL

Unit: mm

ITEM	STANDARD/SPECIFICATION		LIMIT
Brake disc thickness	Front	4.0±0.2	3.5
	Rear	*4.0±0.2	*3.5
Brake disc runout	Front & Rear	—	0.30
Master cylinder bore	Front	11.000—11.043	—
	Rear	*12.000—12.043	—
Master cylinder piston diam.	Front	10.957—10.984	—
	Rear	*11.957—11.984	—

ITEM	STANDARD/SPECIFICATION		LIMIT
Brake caliper cylinder bore	Front	30.230–30.306	—
	Rear	*30.230–30.306	—
Brake caliper piston diam.	Front	30.150–30.200	—
	Rear	*30.150–30.200	—
Brake fluid type	DOT 4		—
Wheel rim runout	Axial	—	2.0
	Radial	—	2.0
Wheel axle runout	Front	—	0.25
Wheel rim size	Front	J12 × MT3.50	—
	Rear	*J13MC × MT3.50	—
Tire size	Front	120/70-12 51L	—
	Rear	*130/60-13 M/C 53L	—
Tire tread depth	Front	—	1.6
	Rear	—	1.6

SUSPENSION

Unit: mm

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	77	—	
Front fork spring free length	124.7	122	
Rear wheel travel	60	—	

TIRE PRESSURE
P-26, 34

COLD INFLATION TIRE PRESSURE	SOLO RIDING		
	kPa	kgf/cm²	psi
FRONT	125	1.25	18
REAR	175	1.75	25

The others

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kgf/cm²	psi	kPa	kgf/cm²	psi
FRONT	125	1.25	18	125	1.25	18
REAR	175	1.75	25	230	2.30	33

FUEL + OIL

ITEM	SPECIFICATION	NOTE
Fuel type	Gasoline used should be graded 91 octane or higher. An unleaded gasoline is recommended.	
Fuel tank capacity	6.8 L	
Engine oil type	Use SUZUKI CCI SUPER OIL. If they are not available, use a good quality 2-stroke oil rated FC under JASO classification.	
Engine oil tank capacity	1.2 L	
Final gear oil type	SAE 10W/40	
Final gear oil capacity	130 ml	

TIGHTENING TORQUE

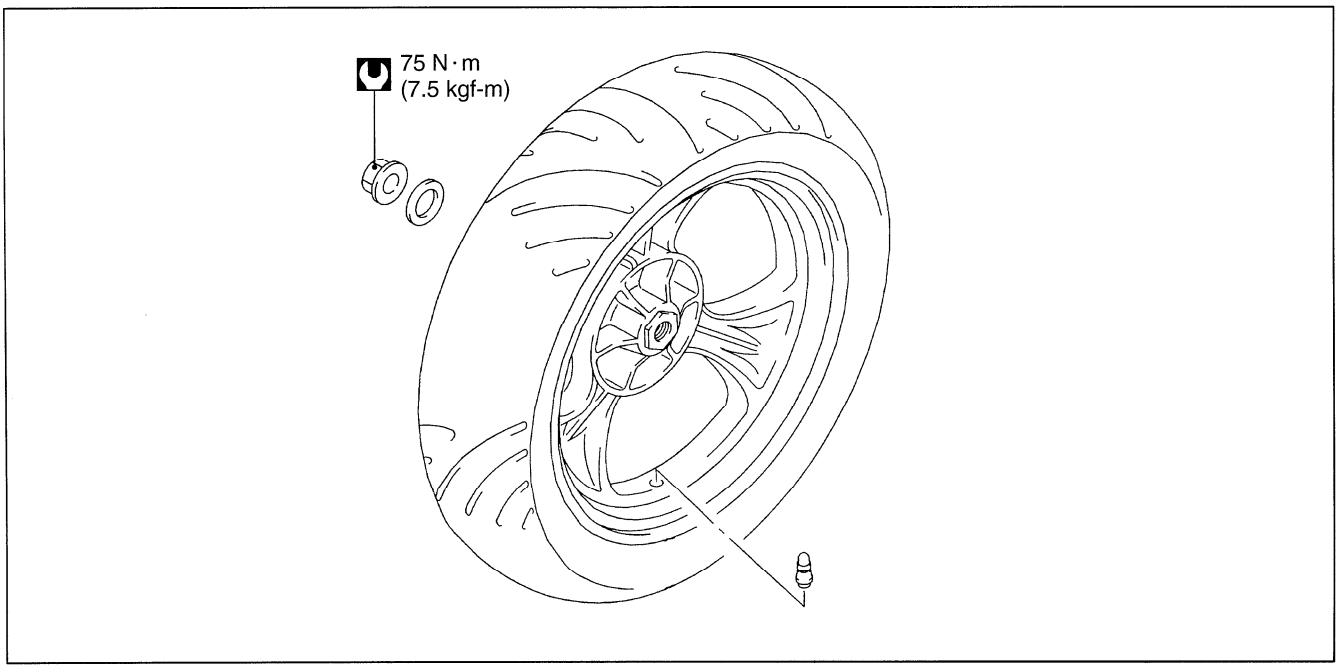
ENGINE

ITEM	N·m	kgf-m
Cylinder head nut	10	1.0
Spark plug	28	2.8
Exhaust pipe bolt and nut	10	1.0
Engine mounting bracket nut	65	6.5
Engine mounting nut	60	6.0
Clutch housing nut	50	5.0
Kick starter nut	50	5.0
Generator rotor nut	40	4.0
Clutch shoe nut	50	5.0
Kick starter lever bolt	10	1.0
Final gear oil drain bolt	5.5	0.55
Final gear oil level bolt	12	1.2
Oil pump mounting screw	4	0.4
Engine coolant temp. switch (AY50W)	13	1.3
Water pump impeller bolt (AY50W)	8	0.8

CHASSIS

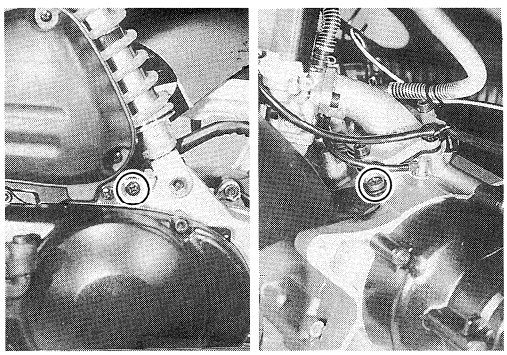
ITEM		N·m	kgf-m
Steering stem lock nut		30	3.0
Handlebar clamp nut		50	5.0
Handlebar set bolt		25	2.5
Front fork inner tube bolt		20	2.0
Brake caliper mounting bolt (front & rear)		26	2.6
Brake hose union bolt (front & rear)		23	2.3
Brake caliper air bleeder valve	Front	7.5	0.75
	Rear	6.5	0.65
Brake caliper housing bolt (front & rear)		25	2.5
Brake disc bolt (front & rear)		23	2.3
Brake master cylinder bolt (front & rear)		10	1.0
Front axle nut		42	4.2
Rear axle nut		75	7.5
Rear shock absorber bolt (upper)		29	2.9
Rear shock absorber nut (lower)		35	3.5

REAR WHEEL (FOR AY50WX/WRX/WY/WRY)

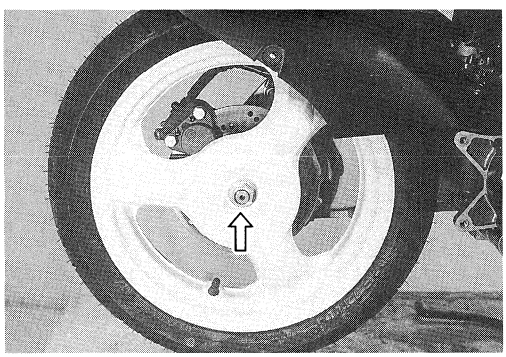


REMOVAL

- Remove the muffler.
- Remove the rear fender mounting screws.



- Remove the rear axle nut.
- Remove the rear wheel with fender.

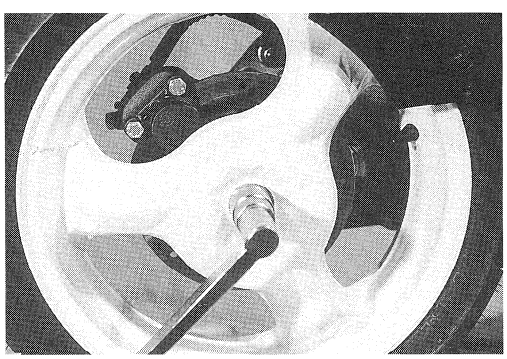


REMOUNTING

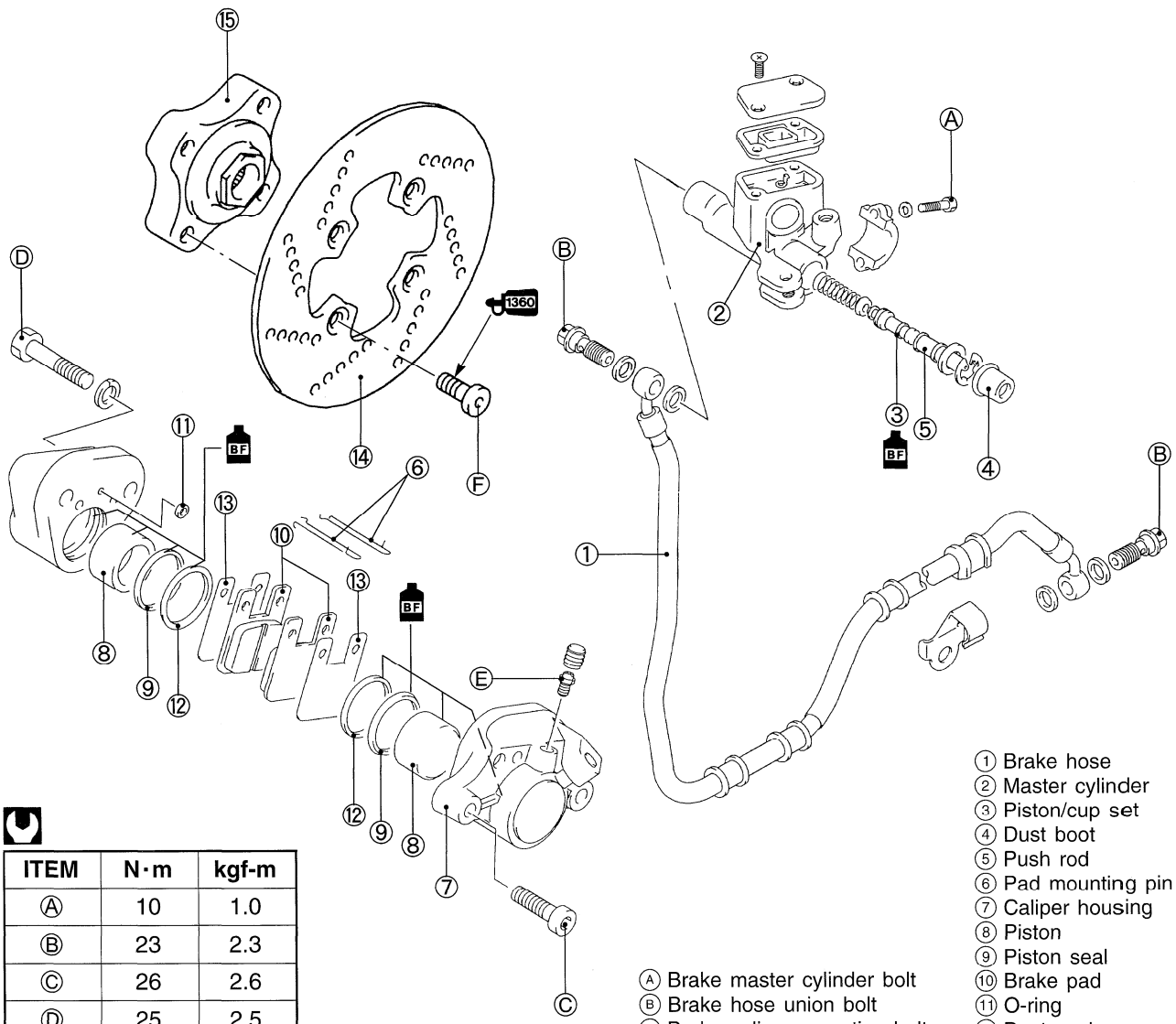
Remount the rear wheel in the reverse order of removal.

- Tighten the rear axle nut to the specified torque.

Rear axle nut: 75 N·m (7.5 kgf-m)



REAR BRAKE



ITEM	N·m	kgf-m
Ⓐ	10	1.0
Ⓑ	23	2.3
Ⓒ	26	2.6
Ⓓ	25	2.5
Ⓔ	6.5	0.65
Ⓕ	23	2.3

① Brake hose
② Master cylinder
③ Piston/cup set
④ Dust boot
⑤ Push rod
⑥ Pad mounting pin
⑦ Caliper housing
⑧ Piston
⑨ Piston seal
⑩ Brake pad
⑪ O-ring
⑫ Dust seal
⑬ Shim
⑭ Brake disc
⑮ Brake disc housing

Ⓐ Brake master cylinder bolt
Ⓑ Brake hose union bolt
Ⓒ Brake caliper mounting bolt
Ⓓ Brake caliper housing bolt
Ⓔ Brake caliper air bleeder valve
Ⓕ Brake disc mounting bolt

⚠ WARNING

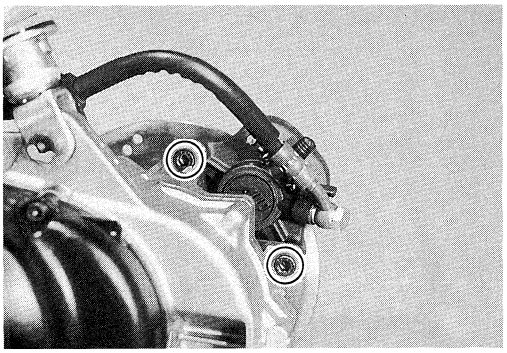
* **This brake system is filled with an ethylene glycol-based DOT 4 brake fluid. Do not use or mix different types of fluid, such as silicone-based or petroleum-based brake fluids.**
* **Do not use any brake fluid taken from old, used or unsealed containers. Never reuse brake fluid left over from the last servicing or which has been stored for long periods of time.**
* **When storing brake fluid, seal the container completely and keep it away from children.**
* **When replenishing brake fluid, take care not to get dust into the fluid.**
* **When washing brake components, use fresh brake fluid. Never use cleaning solvent.**
* **A contaminated brake disc or brake pad reduces braking performance. Discard contaminated pads and clean the disc with high quality brake cleaner or a neutral detergent.**

⚠ CAUTION

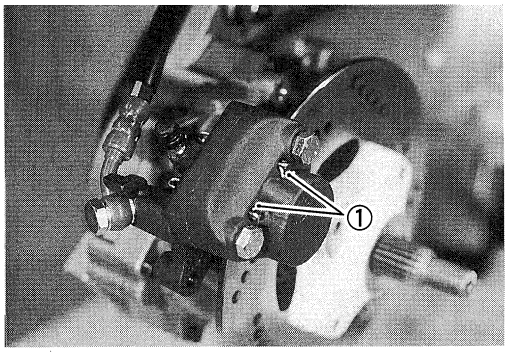
Handle brake fluid with care: the fluid reacts chemically with paint, plastics, rubber materials etc.

BRAKE PADS REPLACEMENT

- Remove the rear wheel. (See p. 10-13.)
- Remove the brake caliper by removing the brake caliper mounting bolts.

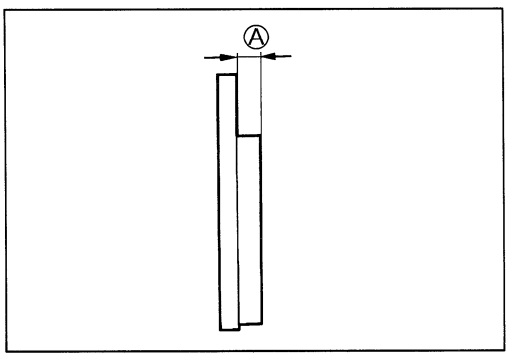


- Remove the brake pad mounting pins ①.
- Remove the brake pads.



- Check the pad thickness Ⓐ. If the thickness is less than the service limit, replace the pads as a set.

DATA Brake pad thickness Ⓐ
Service limit: 0.7 mm



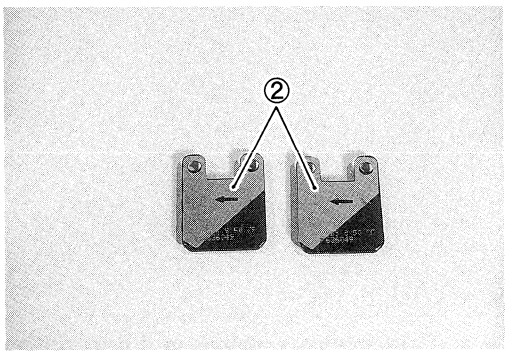
⚠ CAUTION

*** Do not operate the rear brake lever while removing the pads.**
*** Replace the brake pads as a set, otherwise braking performance will be adversely affected.**

- Reinstall the new brake pads, pad shims and brake pad mounting pins.

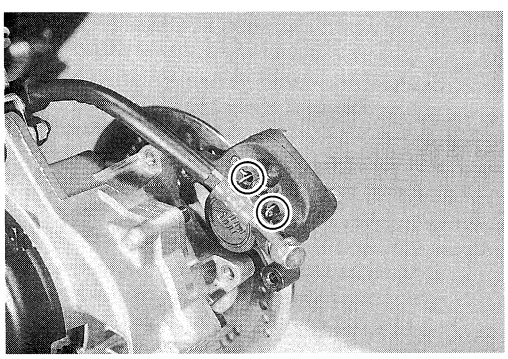
NOTE:

** Install the brake pad shims ② onto the brake pad, as shown.*
** The arrow mark on the brake shim must point in the direction of brake disc rotation.*



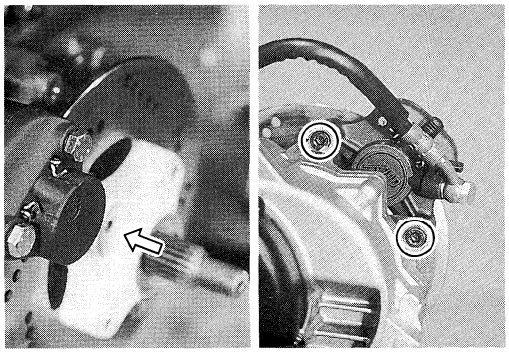
⚠ CAUTION

After installing the brake pad mounting pins, make sure that they are properly installed in the brake caliper.



- Push the brake disc housing to the engine case fully and then tighten the brake caliper mounting bolts to the specified torque.

Brake caliper mounting bolt: 26 N·m (2.6 kgf-m)

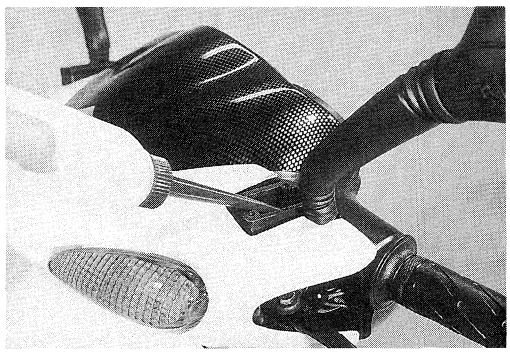


NOTE:
After replacing the brake pads, pump the brake lever a few times to make sure that the brake operates correctly and then check the brake fluid level.

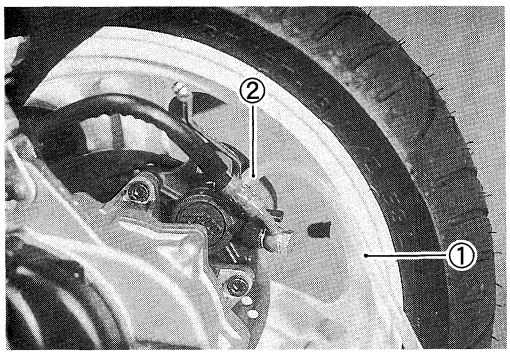
BRAKE FLUID REPLACEMENT

- Place the motorcycle on a level surface and keep the handlebars straight.
- Remove the master cylinder reservoir cap and diaphragm.
- Suck up the old brake fluid as much as possible.
- Fill the reservoir with new brake fluid.

Specification and Classification: DOT 4



- Connect a cleaner hose ① to the air bleeder valve ② and insert the other end of the hose into a receptacle.
- Loosen the air bleeder valve and pump the brake lever until the old brake fluid is completely out of the brake system.
- Close the air bleeder valve and disconnect the clear hose. Fill the reservoir with new brake fluid to the upper end of the inspection window.

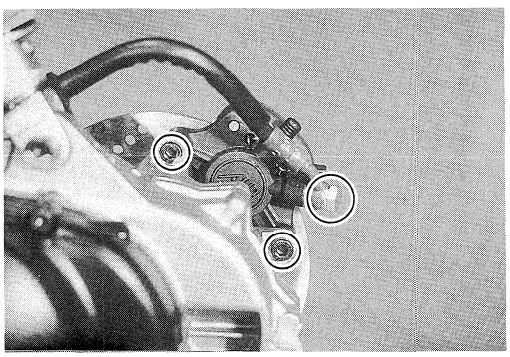


⚠ CAUTION

Bleed air from the brake fluid circuit.

BRAKE CALIPER REMOVAL AND DISASSEMBLY

- Remove the rear wheel. (See p. 10-13.)
- Disconnect the brake hose from the brake caliper by removing the union bolt and allow the brake fluid to drain into a suitable receptacle.
- Slightly loosen the brake caliper housing bolts.
- Remove the brake caliper by removing the caliper mounting bolts.



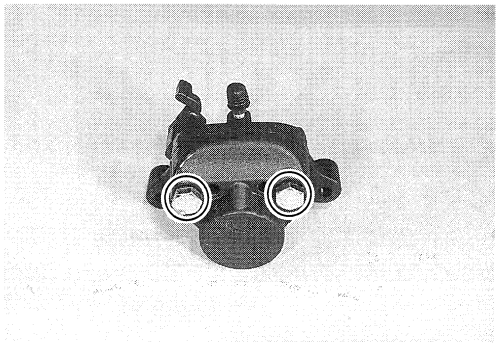
⚠ CAUTION

Never reuse brake fluid left over from previous servicing and which has been stored for long periods of time.

⚠ WARNING

Brake fluid, if it leaks, will interfere with safe running and discolor painted surfaces. Check the brake hose and hose joints for cracks and oil leakage.

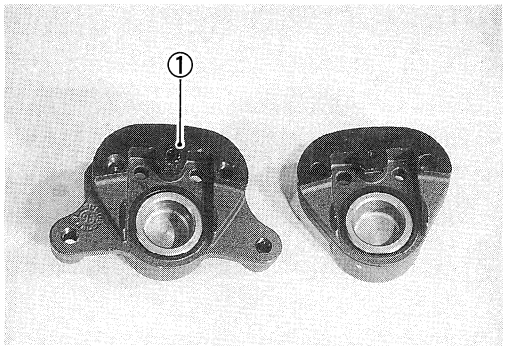
- Remove the brake pads. (See p. 10-15.)
- Remove the brake caliper housing bolts.



- Remove the brake caliper.
- Remove the O-ring ①.

⚠ CAUTION

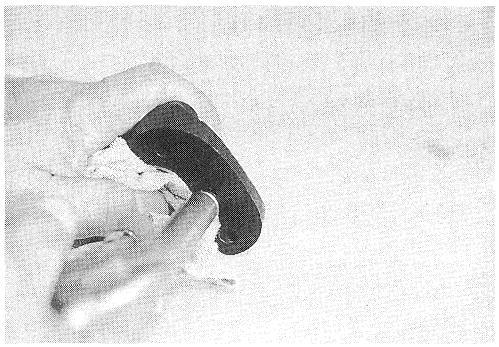
Do not reuse the O-ring to prevent fluid leakage.



- Place a rag over the piston to prevent it from popping out and then force out the piston with compressed air.

⚠ CAUTION

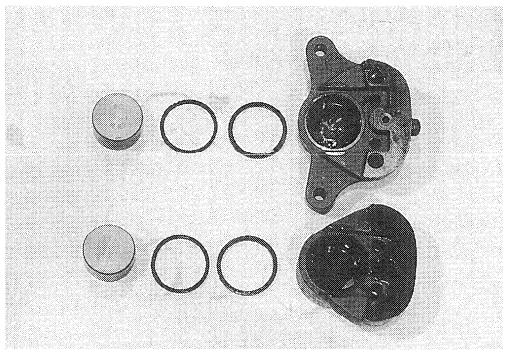
Do not use high pressure air to prevent piston damage.



- Remove the dust seals and piston seals.

⚠ CAUTION

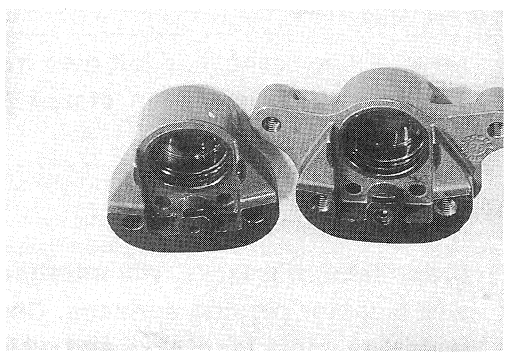
Do not reuse the dust seals and piston seals to prevent fluid leakage.



BRAKE CALIPER INSPECTION

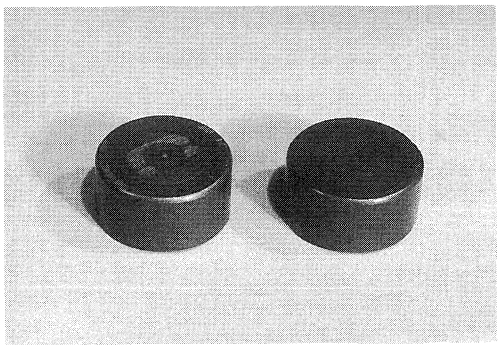
CALIPER

Inspect the caliper cylinder wall for nicks, scratches or other damage. If any damages are found, replace the caliper with a new one.



PISTON

Inspect the piston surface for scratches or other damage. If any damages are found, replace the piston with a new one.



BRAKE CALIPER REASSEMBLY AND REMOUNTING

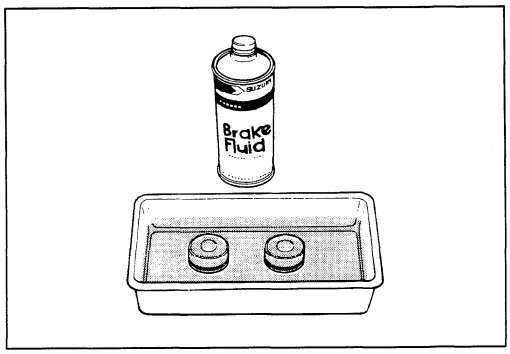
Reassemble and remount the caliper in the reverse order of removal and disassembly. Pay attention to the following points:

- Wash the caliper bore and piston with new brake fluid. Thoroughly wash the dust seal groove and piston seal groove.

BF Specification and Classification: DOT 4

⚠ CAUTION

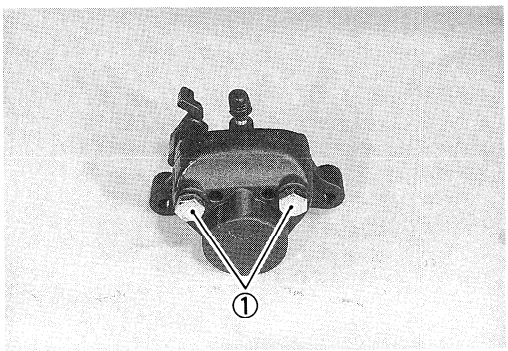
*** When washing the components, use the specified brake fluid. Never use different types of fluid or cleaning solvents such as gasoline, kerosine etc.**
*** Do not wipe the brake fluid off after washing the components.**
*** Replace the piston seals and dust seals with new ones. Apply the brake fluid to both seals when installing them.**



- Tighten each bolt to the specified torque.

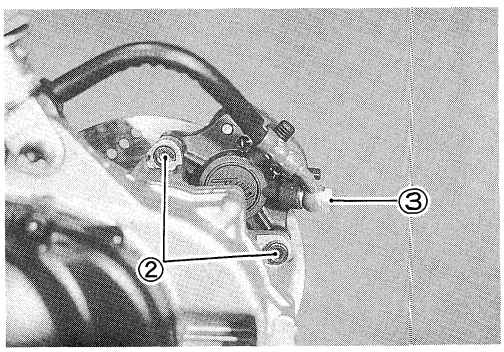
Brake caliper housing bolt ①: 25 N·m (2.5 kgf-m)
Brake caliper mounting bolt ②: 26 N·m (2.6 kgf-m)
Brake hose union bolt ③: 23 N·m (2.3 kgf-m)

NOTE:
Before remounting the brake caliper, push the piston all the way into the caliper.



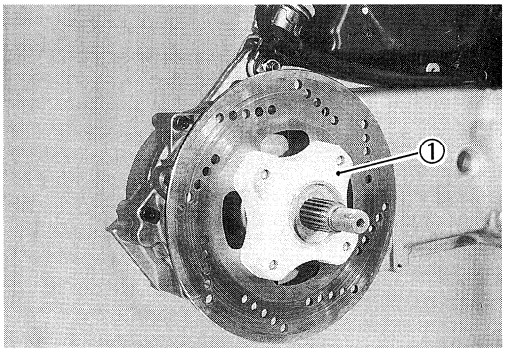
⚠WARNING

Bleed air from the system after remounting the caliper.



BRAKE DISC REMOVAL

- Remove the rear wheel. (See p. 10-13.)
- Remove the rear brake caliper. (See p. 10-15.)
- Remove the brake disc with disc mounting housing ①.

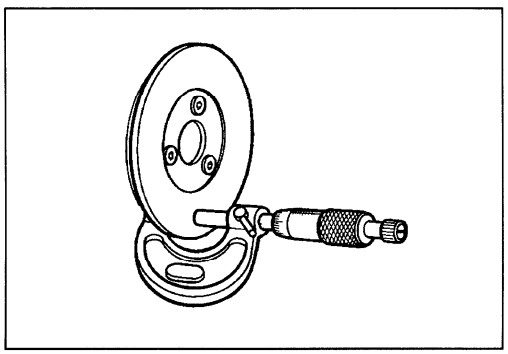


BRAKE DISC INSPECTION AND REPLACEMENT

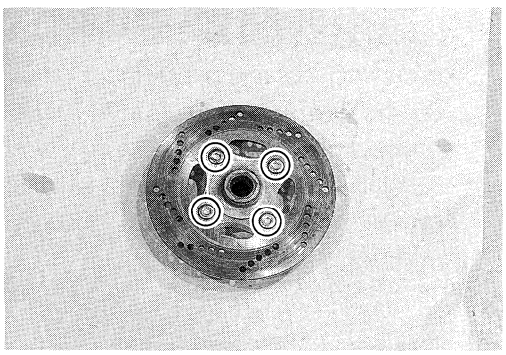
With the brake disc mounted on the housing, measure the disc thickness with a micrometer.

DATA Brake disc thickness
Service Limit: 3.5 mm

TOOL 09900-20205: Micrometer (0–25 mm)



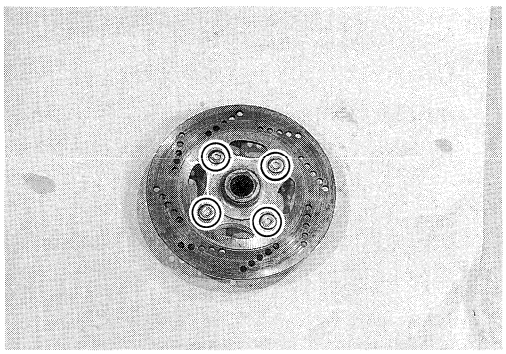
- Remove the brake disc.



- Make sure that the brake disc is clean and free of any grease. Apply THREAD LOCK "1360" to the disc mounting bolts and tighten them to the specified torque.

1360 99000-32130: THREAD LOCK SUPER "1360"

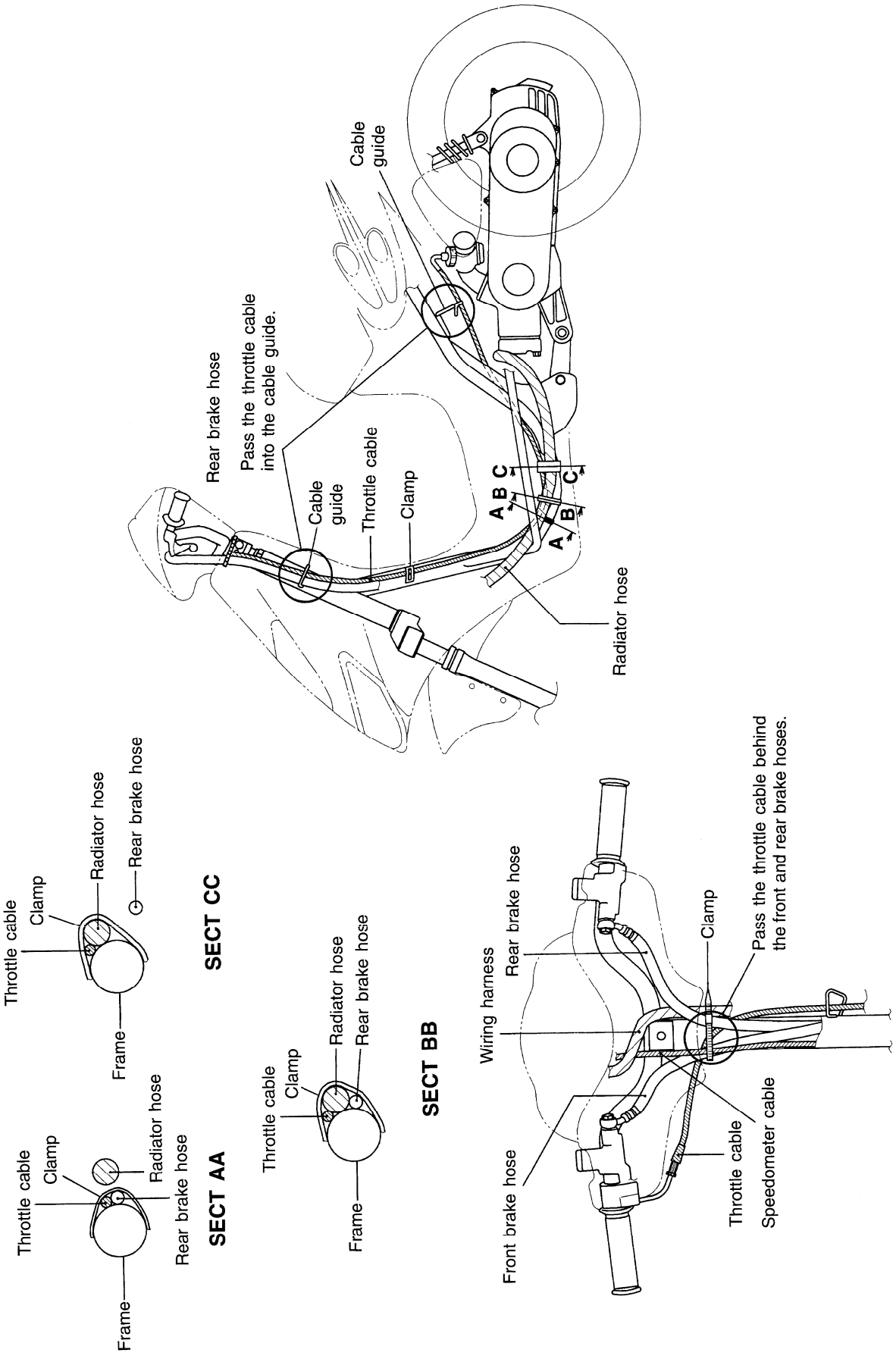
Brake disc bolt: 23 N·m (2.3 kgf-m)



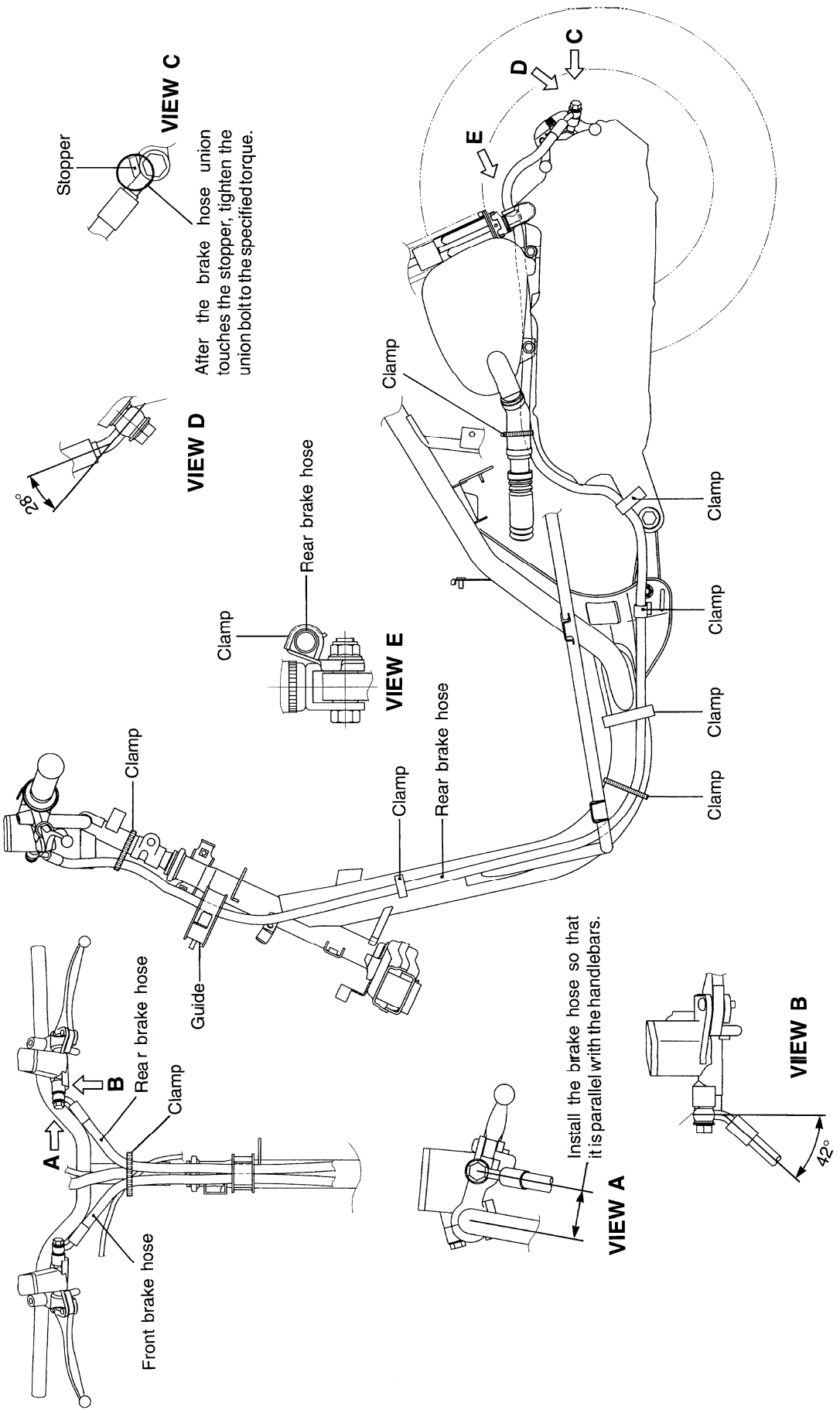
REAR BRAKE MASTER CYLINDER

Refer to pages 6-13 to 6-15.

CABLE ROUTING



REAR BRAKE HOSE ROUTING



AY50K1/WRK1 ('01-MODEL)
AY50K2/WRK2 ('02-MODEL)

This chapter describes specification, service data and servicing procedures which differ from those of the AY50Y/WRY ('00-MODEL).

NOTE:
* *Any differences between AY50Y/WRY ('00-MODEL) and AY50K1/WRK1 ('01-MODEL) in specifications and service data are clearly indicated with the asterisk marks (*).*
* *Please refer to the chapters 1 through 10 for details which are not given in this chapter.*

CONTENTS

COUNTRY OR AREA

P-02: UK
P-04: France
P-18: Swiss
P-22: Germany
P-26: Denmark
P-34: Italy
P-39: Austria
P-53: Spain

SPECIFICATIONS

AY50K1

DIMENSIONS AND DRY MASS

Overall length	1 865 mm
Overall width	650 mm
Overall height	1 125 mm
Wheelbase	1 260 mm
Ground clearance	105 mm ... P-04, 22, 26, 39 120 mm ... The others
Seat height	790 mm
Dry mass	77 kg

ENGINE

Type	Two-stroke, forced air-cooled
Intake system	Reed valve
Number of cylinders	1
Bore	41.0 mm
Stroke	37.4 mm
Piston displacement	49 cm^3
Corrected compression ratio	6.5 : 1 ..... P-02, 22, 39 7.3 : 1 ..... The others
Carburetor	KEIHIN PWS12 ..... P-34, 39 KEIHIN PWS14 ..... The others
Air cleaner	Polyurethane foam element
Starter system	Electric and kick
Lubrication system	SUZUKI "CCI"

TRANSMISSION

Clutch	Dry shoe, automatic centrifugal type
Gearshifting	Automatic, variable ratio
Reduction ratio	* Variable (2.768 – 1.005) ..... P-22 Variable (2.768 – 0.871) ..... P-02, 39 Variable (2.975 – 1.140) ..... The others
Final reduction ratio	14.960 (51/15) × (66/15) ..... P-02, 22, 39 13.812 (51/15) × (65/16) ..... The others
Drive system	V-belt drive

CHASSIS

Front suspension	Inverted telescopic, coil spring
Rear suspension	Swingarm type, coil spring, oil damped.
Steering angle	45° (right & left)
Caster	25° 18'
Trail	76.7 mm
Turning radius	1.9 m
Front brake	Disc brake
Rear brake	Internal expanding
Front tire size	120/70-12 51L
Rear tire size	130/70-12 56L

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Spark plug	NGK BPR6HS, DENSO W20FPR-U ..... P-02, 22 NGK BPR7HS, DENSO W22FPR ..... The others
Battery	12 V 14.4 kC (4Ah)/10HR ..... P-53 12 V 10.8 kC (3Ah)/10HR ..... The others
Generator	Magneto
Fuse	10 A
Headlight	* 12 V 35/35 W
Brake light/Taillight	12 V 21/5 W
Turn signal light	12 V 10 W

CAPACITIES

Fuel tank	6.8 L
Engine oil tank	1.2 L
Final gear oil	130 ml

These specifications are subject to change without notice.

AY50WRK1
DIMENSIONS AND DRY MASS

Overall length	1 865 mm
Overall width	650 mm
Overall height	1 125 mm
Wheelbase	1 260 mm
Ground clearance	105 mm ... P-04, 22, 26
	120 mm ... The others
Seat height	790 mm
Dry mass	83 kg

ENGINE

Type	Two-stroke, liquid-cooled
Intake system	Reed valve
Number of cylinders	1
Bore	41.0 mm
Stroke	37.4 mm
Piston displacement	49 cm^3
Corrected compression ratio	8.1 : 1 ..... P-02, 18, 22
	8.0 : 1 ..... The others
Carburetor	KEIHIN PWS12 ..... P-18, 34
	KEIHIN PWS14 ..... The others
Air cleaner	Polyurethane foam element
Starter system	Electric and kick
Lubrication system	SUZUKI "CCI"

TRANSMISSION

Clutch	Dry shoe, automatic centrifugal type
Gearshifting	Automatic, variable ratio
Reduction ratio	Variable (2.975 – 0.781) P-02, 18, 22
	Variable (2.975 – 1.140) ..... The others
Final reduction ratio	16.271 (51/15) × (67/14) P-02, 18, 22
	13.812 (51/15) × (65/16) ..... The others
Drive system	V-belt drive

CHASSIS

Front suspension	Inverted telescopic, coil spring
Rear suspension	Swingarm type, coil spring, oil damped.
Steering angle	45° (right & left)
Caster	25° 18'
Trail	76.7 mm
Turning radius	1.9 m
Front brake	Disc brake
Rear brake	Disc brake
Front tire size	120/70-12 51L
Rear tire size	130/60-13 M/C 53L

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Spark plug	NGK BPR6HS or DENSO W20FPR P-02, 18, 22
	NGK BPR7HS or DENSO W22FPR ..... The others
Battery	12 V 14.4 kC (4Ah)/10HR P-53
	12 V 10.8 kC (3Ah)/10HR ..... The others
Generator	Magneto
Fuse	10 A
Headlight	* 12 V 35/35 W
Brake light/Taillight	12 V 21/5 W
Turn signal light	12 V 10 W

CAPACITIES

Fuel tank	6.8 L
Engine oil tank	1.2 L
Final gear oil	130 ml
Engine coolant	1 200 ml

These specifications are subject to change without notice.

SERVICE DATA

AY50K1

CYLINDER + PISTON + PISTON RING

Unit: mm

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.06 – 0.07			0.120
Cylinder bore	41.005 – 41.020 Measure at 20 mm from the top surface			41.075
Piston diam.	40.940 – 40.955 Measure at 15 mm from the skirt end			40.885
Cylinder distortion	———			0.05
Cylinder head distortion	———			0.05
Piston ring free end gap	1st	R	Approx. 4.0	3.2
	2nd	R	Approx. 4.3	3.4
Piston ring end gap	1st & 2nd	R	0.10 – 0.25	0.80
Piston ring to groove clearance	1st		0.03 – 0.07	———
	2nd		0.02 – 0.06	———
Piston pin bore	10.002 – 10.010			10.030
Piston pin O.D.	9.995 – 10.000			9.980

CONROD + CRANKSHAFT

Unit: mm

ITEM	STANDARD	LIMIT
Conrod small end I.D.	14.003 – 14.011	14.040
Conrod deflection	———	3.0
Crank web to web width	36.0 ± 0.05	———
Crankshaft runout	———	0.05

OIL PUMP

ITEM	SPECIFICATION
Oil pump reduction ratio	30.000 (30/1)
Oil pump discharge rate	0.9 – 1.1 ml for 5 minutes at 3 000 r/min.

CLUTCH

Unit: mm

ITEM		STANDARD	LIMIT
Clutch wheel I.D.		110.00 – 110.15	110.50
Clutch shoe thickness		3.0	2.0
Clutch engagement	P-02,22,39	3 300 ± 200 r/min.	———
	P-04,26, 34,53	4 400 ± 200 r/min	———
Clutch lock-up	P-02,22,39	4 500 ± 300 r/min.	———
	P-04,26 34,53	6 000 ± 300 r/min.	———

TRANSMISSION

Unit: mm Except ratio

ITEM	STANDARD		LIMIT
Reduction ratio	P-22	* Variable 2.768 – 1.005	———
	P-02, 39	Variable 2.768 – 0.871	———
	P-04,26,34,53	Variable 2.975 – 1.140	———
Final reduction ratio	P-02, 22, 39	14.960 (51/15 × 66/15)	———
	P-04,26,34,53	13.812 (51/15 × 65/16)	———
Drive belt width	P-02, 22, 39	16.9	15.9
	P-04,26,34,53	18.4	17.4
Driven face spring free length	110		104.5

CARBURETOR

ITEM		SPECIFICATION	
		P-04, 26, 53	P-02
Carburetor type		KEIHIN PWS14	←
Bore size		14 mm	←
I.D. No.		35EE	35E2
Idle r/min.		1 900 ± 200 r/min.	1 700 ± 200 r/min.
Float height		5.1 ± 0.5 mm	←
Main jet	(M.J.)	#70	#60
Jet needle	(J.N.)	N4WA-3rd	←
Pilot jet	(P.J.)	#48	#45
Air screw	(A.S.)	1¼ turns back	1 3/8 turns back
Throttle cable play		2 – 4 mm	←

ITEM		SPECIFICATION		
		P-22	P-34	P-39
Carburetor type		KEIHIN PWS14	KEIHIN PWS12	←
Bore size		14 mm	12 mm	←
I.D. No.		35EJ	35EG	35EB
Idle r/min.		1 900 ± 200 r/min.	←	1 700 ± 200 r/min.
Float height		5.1 ± 0.5 mm	←	←
Main jet	(M.J.)	*#65	←	#55
Jet needle	(J.N.)	*N5GJ-3rd	6LQJ-5th	N5GJ-3rd
Pilot jet	(P.J.)	*#40	#45	#35
Air screw	(A.S.)	*1 3/4 turns back	3 turns back	3/8 turn back
Throttle cable play		2 – 4 mm	←	←

ELECTRICAL

Unit: mm

ITEM		SPECIFICATION		NOTE
Spark plug		Type	NGK: BPR6HS DENSO: W20FPR-U BOSCH: WR7BC	P-02, 22, 39
		Gap	0.6 – 0.7	
		Type	NGK: BPR7HS DENSO: W22FPR	P-04, 26, 34, 53
		Gap	0.6 – 0.7	
Spark performance		Over 8 at 1 atm.		
Ignition coil resistance		Secondary	4 – 10 kΩ	Plug cap – B/W lead wire terminal
Generator coil resistance		Charging	*0.2 – 1.5 Ω	Y – Ground
		Pick-up	100 – 270 Ω	R – Ground
Regulated voltage		13.5 – 15.5 V at 5 000 r/min.		
Generator Max. output		*100 W at 5 000 r/min.		
Starter relay resistance		50 – 90 Ω		
Battery	Type designation	FB4L-B		P-53
		YT4L-BS		The others
	Capacity	12 V 14.4 kC (4 Ah)/10 HR		P-53
		12 V 10.8 kC (3 Ah)/10 HR		The others
	Standard electrolyte S.G.	1.280 at 20°C		P-53
Fuse size		10 A		

WATTAGE

Unit: W

ITEM		SPECIFICATION
Headlight	HI	*35
	LOW	*35
Brake light/Taillight		21/5
Turn signal light		10
Speedometer light		1.2 × 2
Fuel meter light		1.2
Turn signal indicator light		2
Oil level indicator light		2
*High beam indicator light		*1.7
Trunk light		2

BRAKE + WHEEL

Unit: mm

ITEM	STANDARD		LIMIT
Brake lever play	Rear	15 – 20	———
Brake drum I.D.	Rear	———	120.7
Brake disc thickness	Front	4.0 ± 0.2	3.5
Brake disc runout	Front	———	0.30
Master cylinder bore	Front	11.000 – 11.043	———
Master cylinder piston diam.	Front	10.957 – 10.984	———

ITEM	STANDARD/SPECIFICATION		LIMIT
Brake caliper cylinder bore	Front	30.230 – 30.306	———
Brake caliper piston diam.	Front	30.150 – 30.200	———
Brake fluid type	DOT 4		———
Wheel rim runout	Axial	———	2.0
	Radial	———	2.0
Wheel axle runout	Front	———	0.25
Wheel rim size	Front	J12 × MT3.50	———
	Rear	J12 × MT3.50	———
Tire size	Front	120/70-12 51L	———
	Rear	130/70-12 56L	———
Tire type	Front	MICHELIN: DEXTER	———
	Rear	MICHELIN: DEXTER	———
Tire tread depth	Front	———	1.6
	Rear	———	1.6

SUSPENSION

Unit: mm

ITEM	STANDARD	LIMIT
Front fork stroke	77	———
Front fork spring free length	124.7	122
Rear wheel travel	60	———

TIRE PRESSURE
P-26, 34

COLD INFLATION TIRE PRESSURE	SOLO RIDING		
	kPa	kgf/cm^2	psi
FRONT	125	1.25	18
REAR	175	1.75	25

The others

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kgf/cm^2	psi	kPa	kgf/cm^2	psi
FRONT	125	1.25	18	125	1.25	18
REAR	175	1.75	25	230	2.30	33

FUEL + OIL

ITEM	SPECIFICATION	NOTE
Fuel type	Gasoline used should be graded 91 octane or higher. An unleaded gasoline is recommended.	
Fuel tank capacity	6.8 L	
Engine oil type	Use SUZUKI CCI SUPER OIL. If they are not available, use a good quality 2-stroke oil rated FC under JASO classification.	
Engine oil tank capacity	1.2 L	
Final gear oil type	SAE 10W/40	
Final gear oil capacity	130 ml	

AY50WRK1

CYLINDER + PISTON + PISTON RING

Unit: mm

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.035 – 0.045			0.120
Cylinder bore	41.010 – 41.025 Measure at 20 mm from the top surface			41.105
Piston diam.	40.970 – 40.985 Measure at 23 mm from the skirt end			40.890
Cylinder distortion	———			0.05
Cylinder head distortion	———			0.05
Piston ring free end gap	1st & 2nd	T	Approx. 4.5	3.6
		N	Approx. 3.0	2.4
Piston ring end gap	1st & 2nd	T&N	0.08 – 0.18	0.80
Piston ring to groove clearance	1st & 2nd		0.01 – 0.05	———
Piston pin bore	12.002 – 12.010			12.030
Piston pin O.D.	11.996 – 12.000			11.980

CONROD + CRANKSHAFT

Unit: mm

ITEM	STANDARD	LIMIT
Conrod small end I.D.	16.003 – 16.011	16.040
Conrod deflection	———	3.0
Crank web to web width	38.0 ± 0.05	———
Crankshaft runout	———	0.05

OIL PUMP

ITEM	SPECIFICATION
Oil pump reduction ratio	30.000 (30/1)
Oil pump discharge rate	0.8 – 1.0 ml for 5 minutes at 3 000 r/min.

CLUTCH

Unit: mm

ITEM		STANDARD	LIMIT
Clutch wheel I.D.		110.00 – 110.15	110.50
Clutch shoe thickness		3.0	2.0
Clutch engagement	P-02,18,22	4 000 ± 200 r/min.	———
	P-04, 26, 34, 53	4 400 ± 200 r/min	———
Clutch lock-up	P-02,18,22	5 600 ± 300 r/min.	———
	P-04, 26, 34, 53	6 000 ± 300 r/min.	———

THERMOSTAT + RADIATOR + ENGINE COOLANT TEMP. SWITCH + ENGINE COOLANT

ITEM		STANDARD/SPECIFICATION	LIMIT
Thermostat valve opening temperature		*Approx. 65°C	———
Thermostat valve lift		*Over 3 mm at 80°C	———
Radiator reservoir cap valve opening pressure		100 kPa (1.0 kgf/cm^2)	———
Engine coolant temp. switch operating temperature	ON	*Approx. 125°C	———
	OFF	*Approx. 118°C	———
Engine coolant type		Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50:50.	———
Engine coolant including reserve		1 200 ml	———

TRANSMISSION

Unit: mm Except ratio

ITEM	STANDARD		LIMIT
Reduction ratio	P-02,18,22,39	Variable 2.975 – 0.781	———
	P-04,26,34,53	Variable 2.975 – 1.140	———
Final reduction ratio	P-02,18,22,39	16.271 (51/15 × 67/14)	———
	P-04,26,34,53	13.812 (51/15 × 65/16)	———
Drive belt width	18.4		17.4
Driven face spring free length	110		104.5

CARBURETOR

ITEM		SPECIFICATION		
		P-04, 26, 53	P-34	P-18
Carburetor type		KEIHIN PWS14	KEIHIN PWS12	←
Bore size		14 mm	12 mm	←
I.D. No.		35EC	35EH	35EB
Idle r/min.		1 900 ± 200 r/min.	←	1 700 ± 200 r/min.
Float height		5.1 ± 0.5 mm	←	←
Main jet	(M.J.)	#68	#65	#55
Jet needle	(J.N.)	N4WA-4th	6LQJ-5th	N5GJ-3rd
Pilot jet	(P.J.)	#48	#45	#35
Air screw	(A.S.)	1¾ turns back	2 turns back	3/8 turn back
Throttle cable play		2 – 4 mm	←	←

ITEM	SPECIFICATION	
	P-02	P-22
Carburetor type	KEIHIN PWS14	←
Bore size	14 mm	←
I.D. No.	35E9	*35EA
Idle r/min.	1 700 ± 200 r/min.	1 900 ± 200 r/min.
Float height	5.1 ± 0.5 mm	←
Main jet (M.J.)	#60	*#62
Jet needle (J.N.)	N4WA-3rd	*N5GJ-2nd
Pilot jet (P.J.)	#45	*←
Air screw (A.S.)	1 3/8 turns back	*1 1/2 turns back
Throttle cable play	2 – 4 mm	←

ELECTRICAL

Unit: mm

ITEM		SPECIFICATION		NOTE
Spark plug		Type	NGK: BPR6HS DENSO: W20FPR	P-02, 18, 22
		Gap	0.6 – 0.7	
		Type	NGK: BPR7HS DENSO: W22FPR	P-04, 26, 34, 53
		Gap	0.6 – 0.7	
Spark performance		Over 8 at 1 atm.		
Ignition coil resistance		Secondary	4 – 10 kΩ	Plug cap – B/W lead wire terminal
Generator coil resistance		Charging	*0.2 – 1.5 Ω	Y – Ground
		Pick-up	100 – 270 Ω	R – Ground
Regulated voltage		13.5 – 15.5 V at 5 000 r/min.		
Generator Max. output		*100 W at 5 000 r/min.		
Starter relay resistance		50 – 90 Ω		
Battery	Type designation	FB4L-B		P-53
		YT4L-BS		The others
	Capacity	12 V 14.4 kC (4 Ah)/10 HR		P-53
		12 V 10.8 kC (3 Ah)/10 HR		The others
	Standard electrolyte S.G.	1.280 at 20°C		P-53
Fuse size		10 A		

WATTAGE

Unit: W

ITEM		SPECIFICATION
Headlight	HI	*35
	LOW	*35
Brake light/Taillight		21/5
Turn signal light		10
Speedometer light		1.2 × 2
Fuel meter light		1.2
Turn signal indicator light		2
Oil level indicator light		2
Water temp. indicator light		2
*High beam indicator light		*1.7
Trunk light		2

BRAKE + WHEEL

Unit: mm

ITEM	STANDARD/SPECIFICATION		LIMIT
Brake disc thickness	Front	4.0 ± 0.2	3.5
	Rear	4.0 ± 0.2	3.5
Brake disc runout	Front & Rear	———	0.30
Master cylinder bore	Front	11.000 – 11.043	———
	Rear	12.000 – 12.043	———
Master cylinder piston diam.	Front	10.957 – 10.984	———
	Rear	11.957 – 11.984	———
Brake caliper cylinder bore	Front	30.230 – 30.306	———
	Rear	30.230 – 30.306	———
Brake caliper piston diam.	Front	30.150 – 30.200	———
	Rear	30.150 – 30.200	———
Brake fluid type	DOT 4		———
Wheel rim runout	Axial	———	2.0
	Radial	———	2.0
Wheel axle runout	Front	———	0.25
Wheel rim size	Front	J12 × MT3.50	———
	Rear	J13MC × MT3.50	———
Tire size	Front	120/70-12 51L	———
	Rear	130/60-13 M/C 53L	———
Tire type	Front	METZELER: ME 7 TEEN	———
	Rear	METZELER: ME 7 TEEN	———
Tire tread depth	Front	———	1.6
	Rear	———	1.6

SUSPENSION

Unit: mm

ITEM	STANDARD	LIMIT
Front fork stroke	77	———
Front fork spring free length	124.7	122
Rear wheel travel	60	———

TIRE PRESSURE
P-26, 34

COLD INFLATION TIRE PRESSURE	SOLO RIDING		
	kPa	kgf/cm^2	psi
FRONT	125	1.25	18
REAR	175	1.75	25

The others

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kgf/cm^2	psi	kPa	kgf/cm^2	psi
FRONT	125	1.25	18	125	1.25	18
REAR	175	1.75	25	230	2.30	33

FUEL + OIL

ITEM	SPECIFICATION	NOTE
Fuel type	Gasoline used should be graded 91 octane or higher. An unleaded gasoline is recommended.	
Fuel tank capacity	6.8 L	
Engine oil type	Use SUZUKI CCI SUPER OIL. If they are not available, use a good quality 2-stroke oil rated FC under JASO classification.	
Engine oil tank capacity	1.2 L	
Final gear oil type	SAE 10W/40	
Final gear oil capacity	130 ml	

THERMOSTAT (For AY50WRK1)

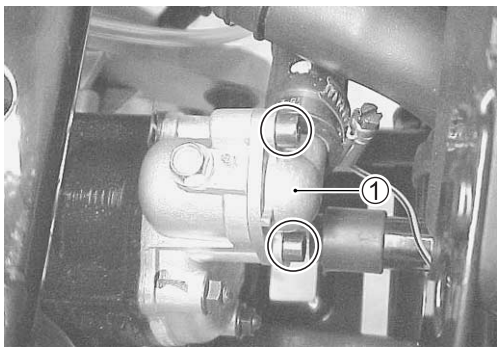
REMOVAL

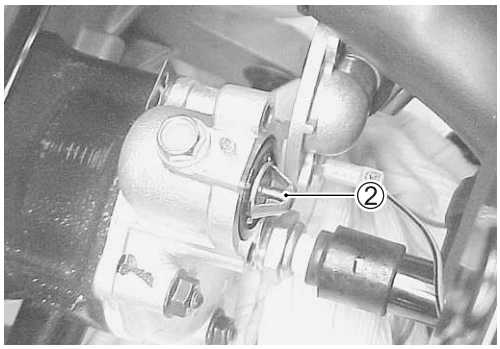
- Remove the trunk.
- Drain engine coolant.

⚠ WARNING

*** Do not open the engine coolant reservoir cap when the engine is hot, as you may be injured by escaping hot liquid or vapor.**
*** The engine must be cool before servicing the cooling system.**
*** Engine coolant may be harmful if swallowed or if it comes in contact with the skin or eyes. If engine coolant gets into the eyes or contacts the skin, flush eyes or wash the skin throughly, with plenty of water. If engine coolant is swallowed, induce vomiting and call a physician immediately.**

- Remove the thermostat cover ①.
- Remove the thermostat ②.

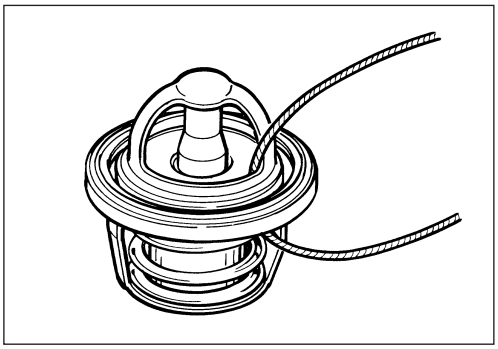




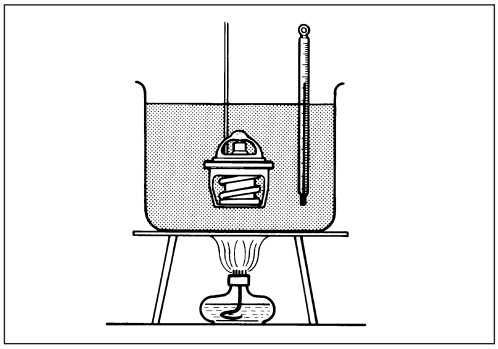
INSPECTION

Inspect the thermostat for cracks or damage. If any damages are found, replace the thermostat with a new one.

Check the opening temperature of the thermostat valve. Pass a string between the flange as shown.

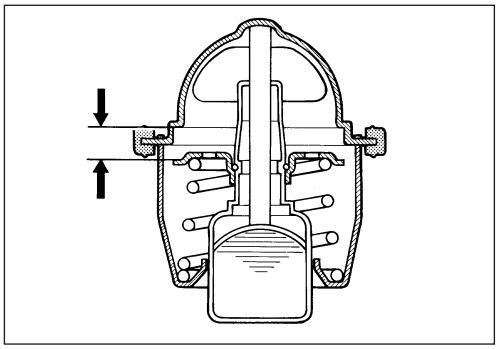


Immerse the thermostat into a container of water and keep it suspended as shown.



Slowly heat the container and check the temperature on the thermometer when the thermostat valve begins to open.

DATA Thermostat valve opening temperature: Approx. 65 °C



Continue heating the container until the water temperature is above 80 °C.
When the water temperature reaches 80 °C, the thermostat valve should have lifted at least 3 mm.

DATA Thermostat valve lift: Over 3 mm at 80 °C

If the thermostat is faulty in either of these two checks, replace it with a new one.

INSTALLATION

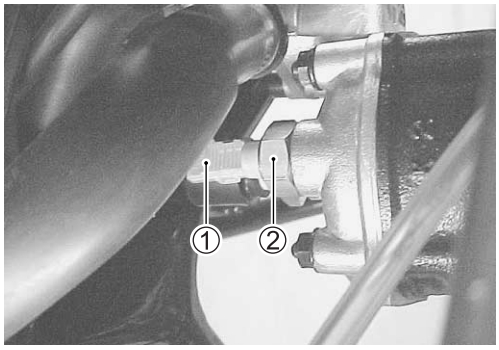
Install the thermostat in the reverse order of removal.

- After installing the thermostat, be sure to add engine coolant.

ENGINE COOLANT TEMP. SWITCH (For AY50WRK1)

REMOVAL

- Remove the trunk.
- Drain engine coolant.
- Disconnect the lead wire ①.
- Remove the engine coolant temp. switch ②.



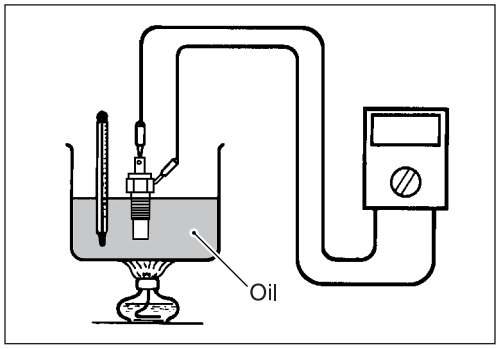
INSPECTION

Check the operating temperature of the engine coolant temp. switch.

- Place the engine coolant temp. switch into a container of oil.
- Heat the oil and check the temperature on the thermometer when the engine coolant temp. switch is operated.

TOOL 09900-25008: Multi circuit tester set

DATA Engine coolant temp. switch specification:
OFF→ON: Approx. 125 °C
ON→OFF: Approx. 118 °C



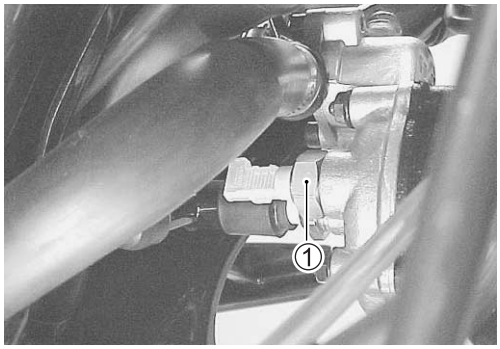
INSTALLATION

Install the engine coolant temp. switch in the reverse order of removal. Pay attention to the following points:

- Apply SUZUKI BOND No. 1215 to the thread portion of the engine coolant temp. switch.

1215 99000-31110: SUZUKI BOND No.1215

- Tighten the engine coolant temp. switch ① securely and connect the lead wire.



REGULATOR/RECTIFIER

Measure the voltage between the terminals using the multi circuit tester, as indicated in the table below. If the voltage is not within the specified value, replace the regulator/rectifier with a new one.

09900-25008: Multi circuit tester set

Tester knob indication: Diode test (⊣◀)

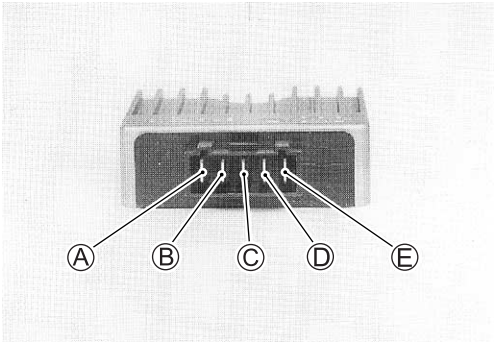
Unit: V

⊖ Tester probe	⊕ Tester probe					
		Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
Ⓐ		0	∗	∗	∗
Ⓑ	0		∗	∗	∗
Ⓒ	1.0 – 1.2	1.0 – 1.2		0.9 – 1.1	0.5 – 0.7
Ⓓ	1.2 – 1.4	1.2 – 1.4	∗		1.0 – 1.2
Ⓔ	0.5 – 0.7	0.5 – 0.7	∗	0.4 – 0.6	

∗ More than 1.4 V (tester's battery voltage)

NOTE:

If the tester reads under 1.4 V, disconnect the tester probes from the wire leads, and then replace the multi circuit tester's battery.



CDI/IGNITION COIL

Measure the voltage between the terminals using the multi circut tester, as indicated in the table below. If the voltage is not within the specified value, replace the CDI/ignition coil with a new one.

09900-25008: Multi circuit tester set

Tester knob indication: Diode test (⊣◀)

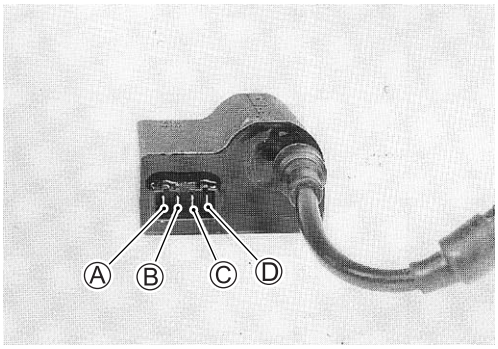
Unit: V

⊖ Tester probe	⊕ Tester probe				
		Ⓐ	Ⓑ	Ⓒ	Ⓓ
Ⓐ		∗	1.2 – 1.4	1.2 – 1.4
Ⓑ	∗		0.8 – 1.0	0.8 – 1.0
Ⓒ	∗	∗		0.03 – 0.3
Ⓓ	∗	∗	0.03 – 0.3	

∗ More than 1.4 V (tester's battery voltage)

NOTE:

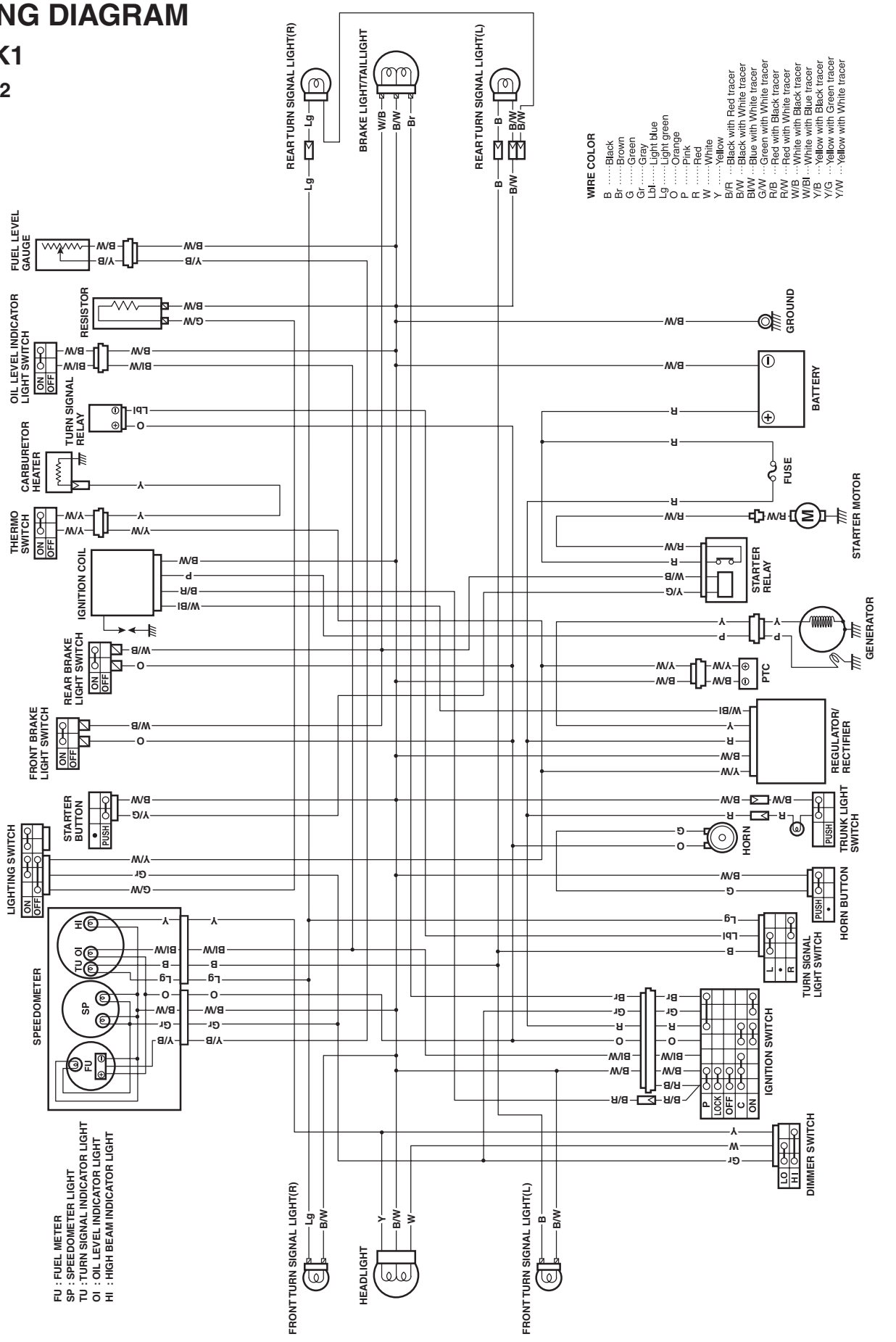
If the tester reads under 1.4 V, disconnect the tester probes from the wire leads, and then replace the multi circuit tester's battery.



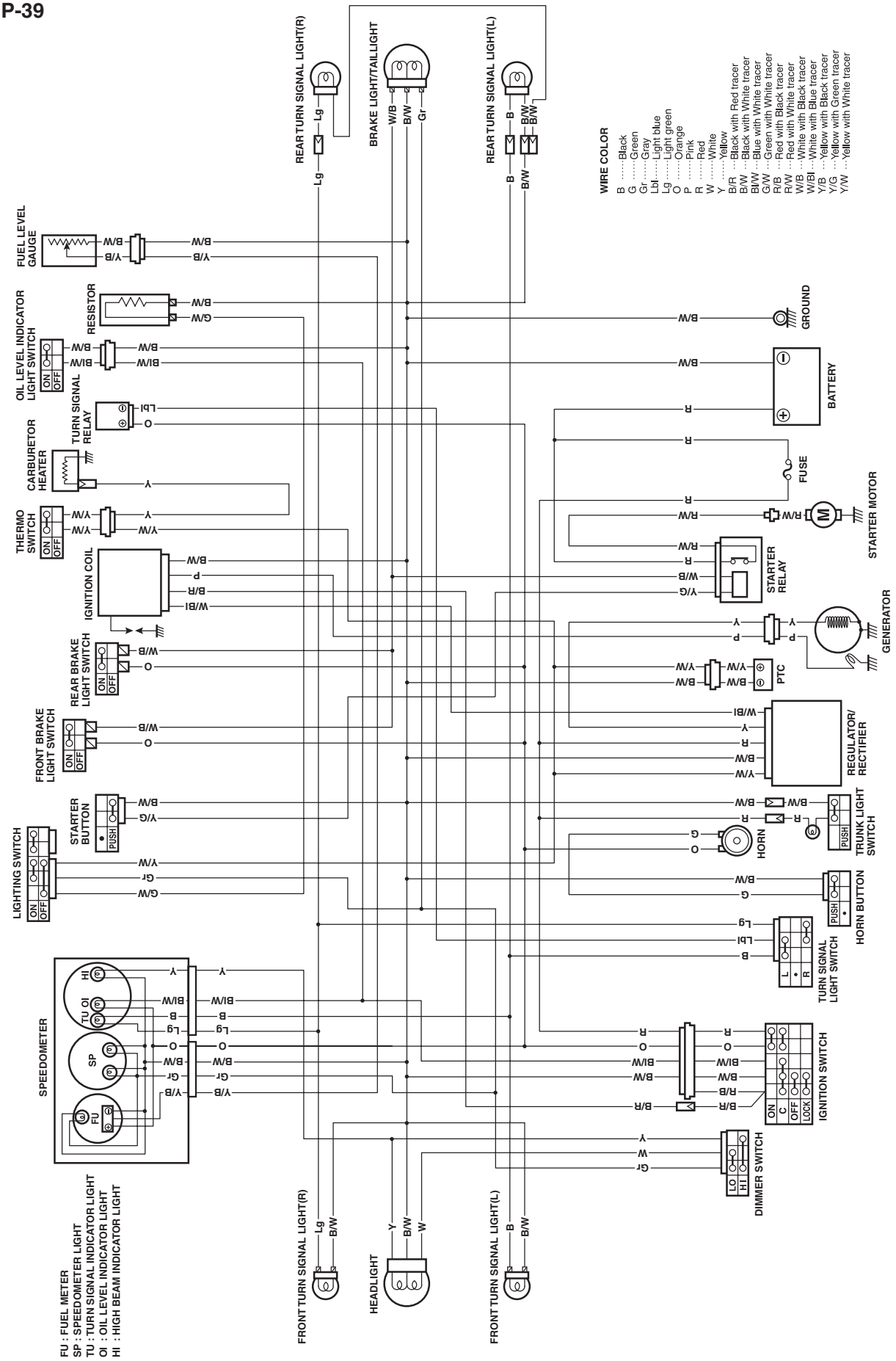
WIRING DIAGRAM

AY50K1

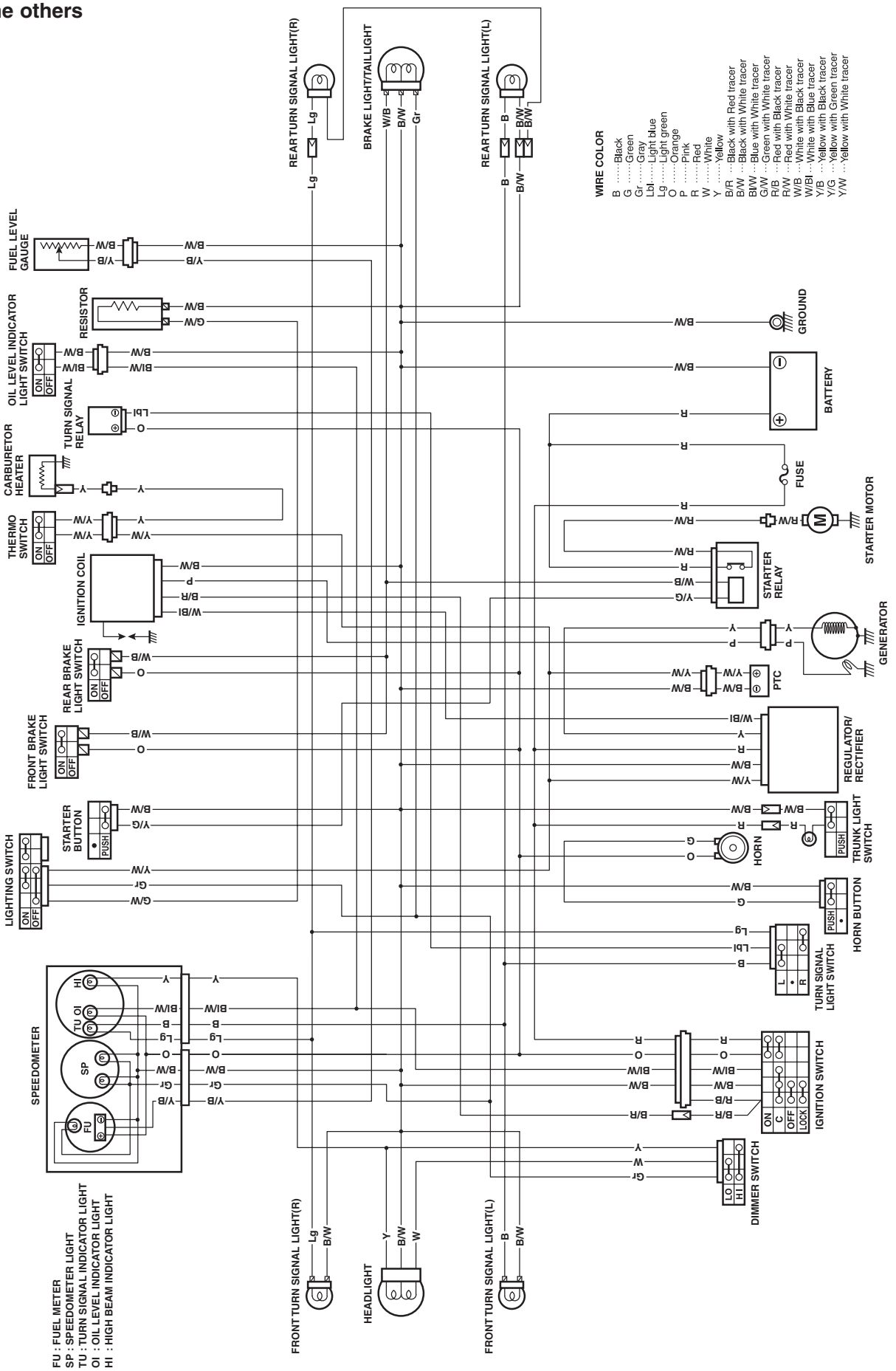
For P-02



For P-39

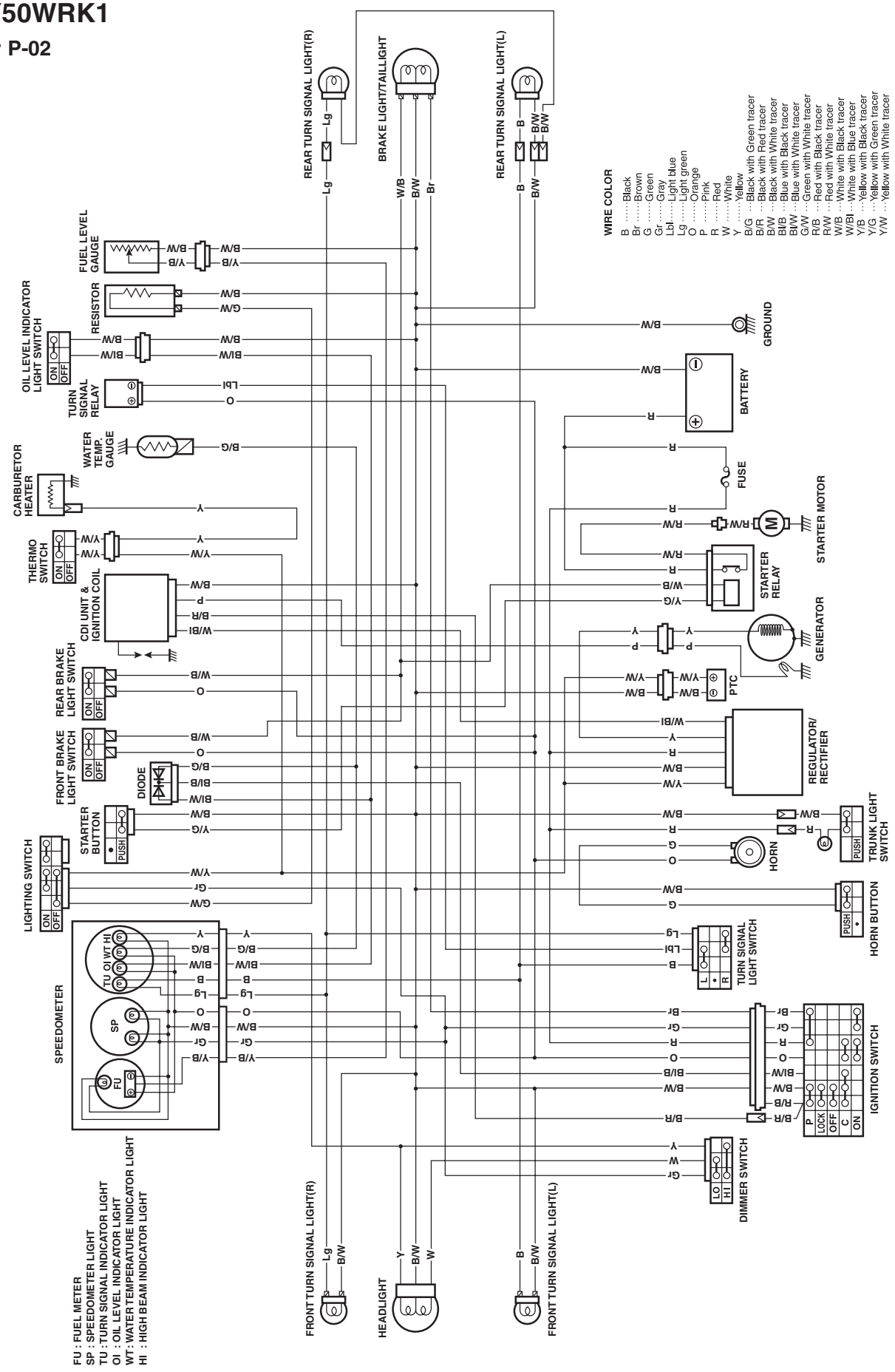

REAR TURN SIGNAL LIGHT(R)
BRAKE LIGHT/TAILLIGHT
REAR TURN SIGNAL LIGHT(L)
WIRE COLOR
B .....Black
G .....Green
Gr .....Gray
Lbl .....Light blue
Lg .....Light green
O .....Orange
P .....Pink
R .....Red
W .....White
Y .....Yellow
B/R ...Black with Red tracer
B/W ...Black with White tracer
Bl/W ...Blue with White tracer
G/W ...Green with White tracer
R/B ...Red with Black tracer
R/W ...Red with White tracer
W/B ...White with Black tracer
W/Bl ...White with Blue tracer
Y/B ...Yellow with Black tracer
Y/G ...Yellow with Green tracer
Y/W ...Yellow with White tracer
FUEL LEVEL GAUGE
RESISTOR
OIL LEVEL INDICATOR LIGHT SWITCH
TURN SIGNAL RELAY
CARBURETOR HEATER
THERMO SWITCH
IGNITION COIL
REAR BRAKE LIGHT SWITCH
FRONT BRAKE LIGHT SWITCH
STARTER BUTTON
LIGHTING SWITCH
SPEEDOMETER
GROUND
BATTERY
FUSE
STARTER MOTOR
STARTER RELAY
GENERATOR
PTC
REGULATOR/ RECTIFIER
HORN
TRUNK LIGHT SWITCH
HORN BUTTON
TURN SIGNAL LIGHT SWITCH
IGNITION SWITCH
DIMMER SWITCH
FRONT TURN SIGNAL LIGHT(R)
HEADLIGHT
FRONT TURN SIGNAL LIGHT(L)
FU : FUEL METER
SP : SPEEDOMETER LIGHT
TU : TURN SIGNAL INDICATOR LIGHT
OI : OIL LEVEL INDICATOR LIGHT
HI : HIGH BEAM INDICATOR LIGHT

For the others



AY50WRK1

For P-02



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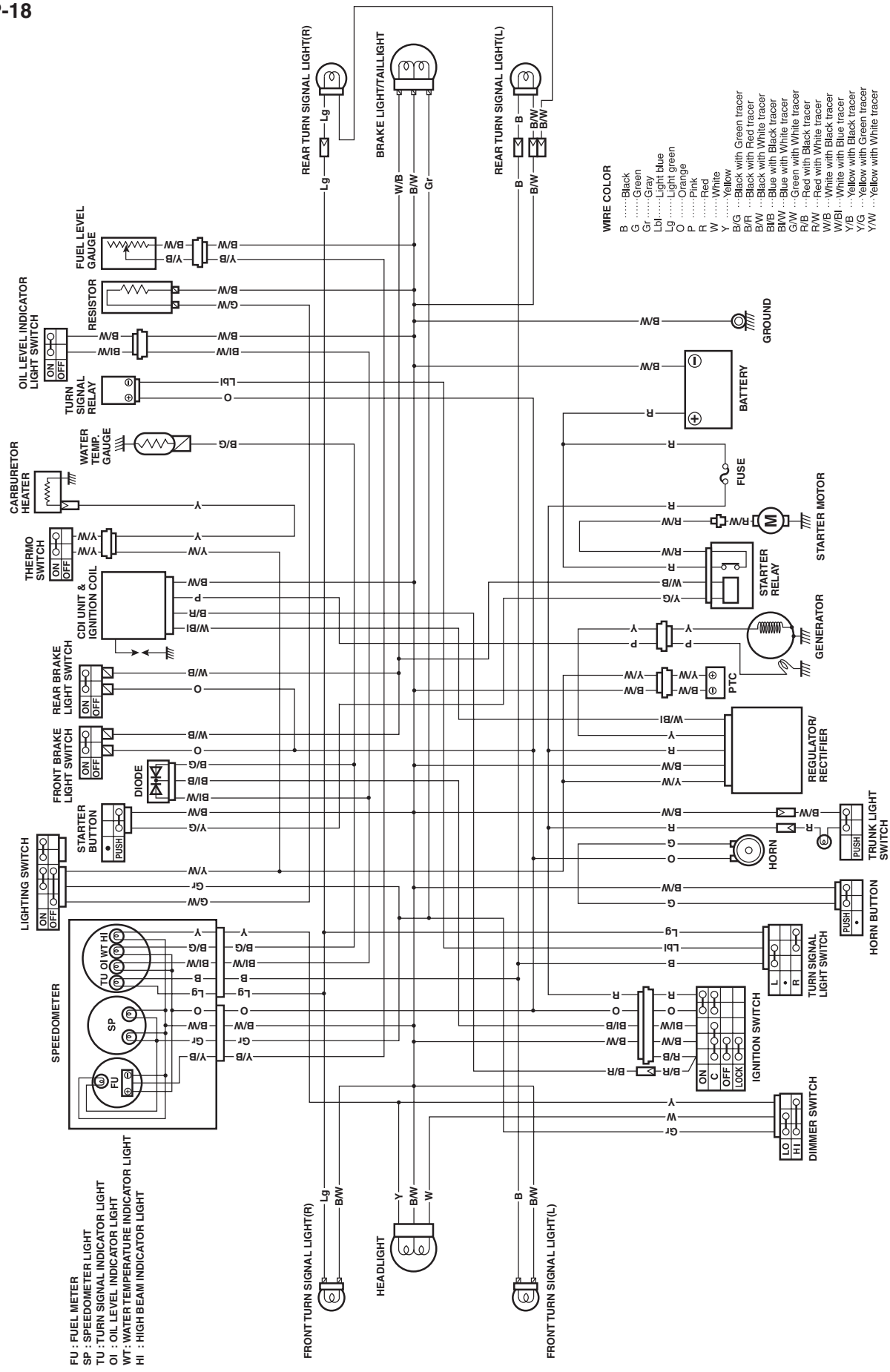
WIRE COLOR
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G .....Green
Gr .....Gray
Lbl .....Light blue
Lg .....Light green
O .....Orange
P .....Pink
R .....Red
W .....White
Y .....Yellow
B/G ...Black with Green tracer
B/R ...Black with Red tracer
B/W ...Black with White tracer
Bl/B ...Blue with Black tracer
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REAR TURN SIGNAL LIGHT(R)
BRAKE LIGHT/TAILLIGHT
REAR TURN SIGNAL LIGHT(L)
FUEL LEVEL GAUGE
RESISTOR
OIL LEVEL INDICATOR LIGHT SWITCH
TURN SIGNAL RELAY
WATER TEMP. GAUGE
CARBURETOR HEATER
THERMO SWITCH
CDI UNIT & IGNITION COIL
REAR BRAKE LIGHT SWITCH
FRONT BRAKE LIGHT SWITCH
DIODE
STARTER BUTTON
LIGHTING SWITCH
SPEEDOMETER
GROUND
BATTERY
FUSE
STARTER MOTOR
STARTER RELAY
GENERATOR
PTC
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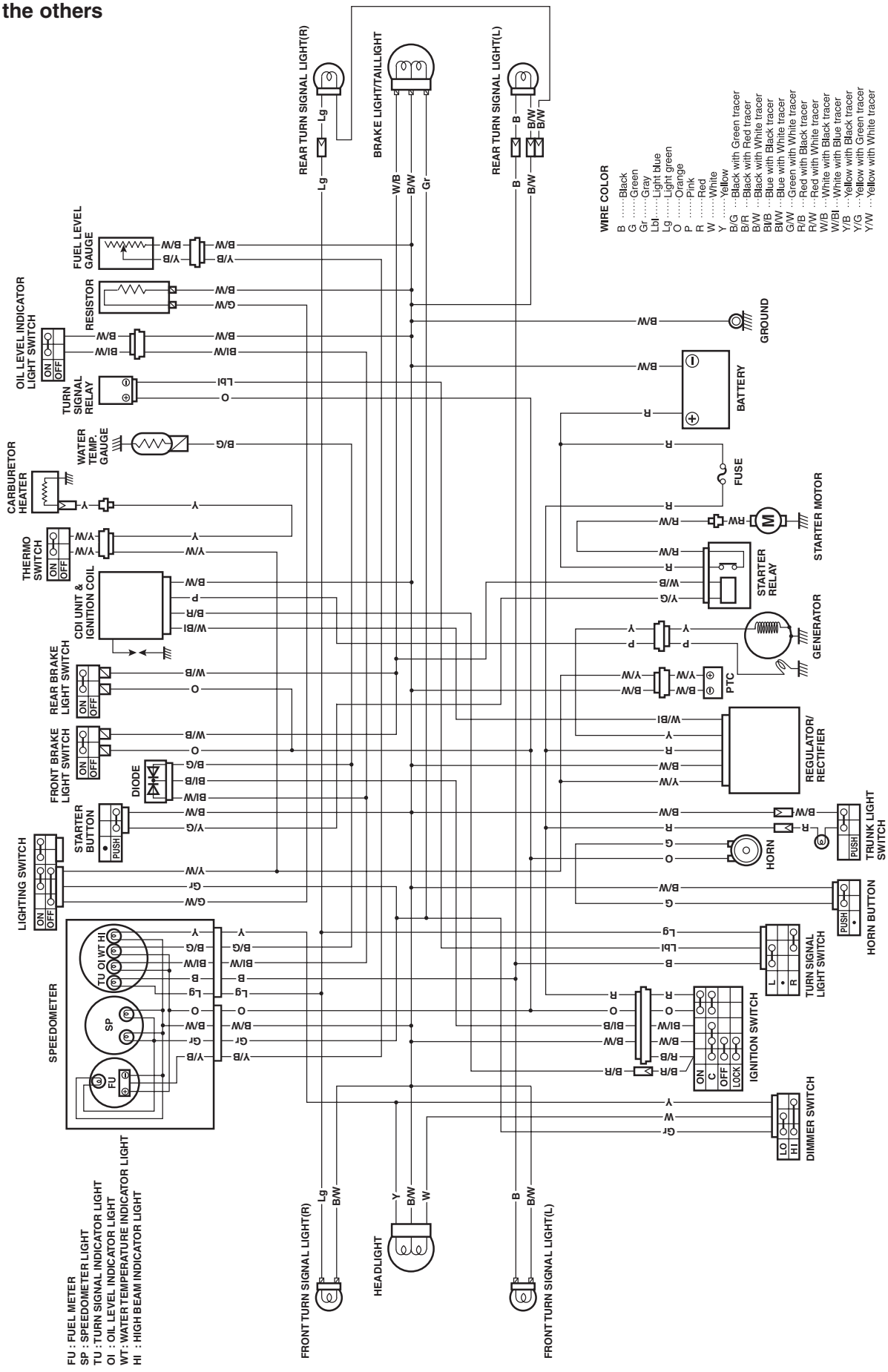
TRUNK LIGHT SWITCH
HORN BUTTON
TURN SIGNAL LIGHT SWITCH
IGNITION SWITCH
DIMMER SWITCH
FRONT TURN SIGNAL LIGHT(R)
HEADLIGHT
FRONT TURN SIGNAL LIGHT(L)
FU : FUEL METER
SP : SPEEDOMETER LIGHT
TU : TURN SIGNAL INDICATOR LIGHT
OI : OIL LEVEL INDICATOR LIGHT
WT : WATER TEMPERATURE INDICATOR LIGHT
HI : HIGH BEAM INDICATOR LIGHT

For the others



AY50K3/SK3/WK3/WSK3 ('03-MODEL)

This chapter describes specifications, service data and servicing procedures which differ from those of the AY50K2/WRK2 ('02-MODEL).

NOTE:
Please refer to the chapters 1 through 11 for details which are not given in this chapter.

CONTENTS

COUNTRY OR AREA

P-02: UK
P-19: EU

SPECIFICATIONS
AY50 AND AY50S
DIMENSIONS AND DRY MASS

Overall length	1 865 mm (73.4 in)
Overall width	650 mm (25.6 in)
Overall height	1 125 mm (44.3 in)
Wheelbase	1 260 mm (49.6 in)
Ground clearance	105 mm (4.1 in)
Seat height	790 mm (31.1 in)
Dry mass	77 kg (169 lbs)

ENGINE

Type	2 stroke, Forced air-cooled
Intake system	Reed valve
Number of cylinders	1
Bore	41.0 mm (1.614 in)
Stroke	37.4 mm (1.472 in)
Displacement	49 cm^3 (3.0 cu. in)
Corrected compression ratio	6.5 : 1
Carburetor	KEIHIN PWS14
Air cleaner	Polyurethane foam element
Starter system	Electric and Kick
Lubrication system	SUZUKI "CCI"
Idle speed	1 900 ± 200 r/min

DRIVE TRAIN

Clutch	Dry shoe, automatic, centrifugal type
Gearshifting	Automatic, variable ratio
Gear ratio, variable	Variable reduction ratio (2.768 – 1.005)
Final reduction ratio	14.960 (51/15 × 65/15)
Drive system	V-belt drive

CHASSIS

Front suspension	Inverted telescopic, coil spring
Rear suspension	Swingarm, coil spring, oil damped (SHOWA)
Front suspension stroke	77 mm (3.0 in)
Front wheel travel	70 mm (2.8 in)
Rear wheel travel	60 mm (2.4 in)
Caster	25° 20'
Trail	76 mm (2.99 in)
Steering angle	45° (left and right)
Turning radius	1.9 m (6.2 ft)
Front brake	Disc brake
Rear brake	Drum brake
Front tire size	120/70-12 51L, tubeless
Rear tire size	130/70-12 56L, tubeless

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	14° B.T.D.C. at 4 000 rpm
Spark plug	NGK BPR6HS or DENSO W20FPR-U
Battery	12V 10.8 kC (3Ah)/10HR
Generator	Flywheel magneto
Fuse	10A
Headlight	12V 35/35W
Brake light/Taillight	12V 21/5W
Turn signal light	12V 10W
Speedometer light	12V 1.2W × 2
Fuel level gauge light	12V 1.2W
High beam indicator light	12V 1.2W
Turn signal indicator light	12V 2W
Oil level indicator light	12V 2W
Trunk light	12V 2W

CAPACITIES

Fuel tank	6.8 L (1.8/1.5 US/Imp gal)
Engine oil tank	1.2 L (1.3/1.1 US/Imp qt)
Final gear oil,oil change	120 ml (4.1/4.2 US/Imp oz)
overhaul	130 ml (4.4/4.6 US/Imp oz)

AY50W AND AY50WS

DIMENSIONS AND DRY MASS

Overall length	1 865 mm (73.4 in)
Overall width	650 mm (25.6 in)
Overall height	1 125 mm (44.3 in)
Wheelbase	1 260 mm (49.6 in)
Ground clearance	105 mm (4.1 in)
Seat height	790 mm (31.1 in)
Dry mass	83 kg (182 lbs)

ENGINE

Type	2 stroke, liquid-cooled
Intake system	Reed valve
Number of cylinders	1
Bore	41.0 mm (1.614 in)
Stroke	37.4 mm (1.472 in)
Displacement	49 cm^3 (3.0 cu. in)
Corrected compression ratio	8.0 : 1
Carburetor	KEIHIN PWS14
Air cleaner	Polyurethane foam element
Starter system	Electric and Kick
Lubrication system	SUZUKI "CCI"
Idle speed	1 900 ± 200 r/min

DRIVE TRAIN

Clutch	Dry shoe, automatic, centrifugal type
Gearshifting	Automatic, variable ratio
Gear ratio, reduction ratio	Variable reduction ratio (2.975 – 1.033)
Final reduction ratio	16.271 (51/15 × 67/14)
Drive system	V-belt drive

CHASSIS

Front suspension	Inverted telescopic, coil spring
Rear suspension	Swingarm, coil spring, oil damped (SHOWA)
Front suspension stroke	77 mm (3.0 in)
Front wheel travel	70 mm (2.8 in)
Rear wheel travel	60 mm (2.4 in)
Caster	25° 20'
Trail	76 mm (2.99 in)
Steering angle	45° (left and right)
Turning radius	1.9 m (6.2 ft)
Front brake	Disc brake
Rear brake	Disc brake
Front tire size	120/70-12 51L, tubeless
Rear tire size	130/60-13 M/C 53L, tubeless

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	14° B.T.D.C. at 4 000 rpm
Spark plug	NGK BPR6HS or DENSO W20FPR
Battery	12V 10.8 kC (3Ah)/10HR
Generator	Flywheel magneto
Fuse	10A
Headlight	12V 35/35W
Brake light/Taillight	12V 21/5W
Turn signal light	12V 10W
Speedometer light	12V 1.2W × 2
Fuel level gauge light	12V 1.2W
Turn signal indicator light	12V 2W
High beam indicator light	12V 1.2W
Oil level indicator light	12V 2W
Coolant temperature check light	12V 2W
Trunk light	12V 2W

CAPACITIES

Fuel tank	6.8 L (1.8/1.5 US/Imp gal)
Engine oil tank	1.2 L (1.3/1.1 US/Imp qt)
Final gear oil, oil change	120 ml (4.1/4.2 US/Imp oz)
overhaul	130 ml (4.4/4.6 US/Imp oz)
Coolant	1 200 ml (2.5/2.1 US/Imp oz)

SERVICE DATA

AY50 AND AY50S

CYLINDER + PISTON + PISTON RING

Unit: mm

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.06 – 0.07			0.120
Cylinder bore	41.005 – 41.020 Measure at 20 mm from the top surface			41.075
Piston diam.	40.940 – 40.955 Measure at 15 mm from the skirt end			40.885
Cylinder distortion	—			0.05
Cylinder head distortion	—			0.05
Piston ring free end gap	1st	R	Approx. 4.0	3.2
	2nd	R	Approx. 4.3	3.4
Piston ring end gap	1st & 2nd	R	0.10 – 0.25	0.80
Piston ring to groove clearance	1st		0.03 – 0.07	—
	2nd		0.02 – 0.06	—
Piston pin bore	10.002 – 10.010			10.030
Piston pin O.D.	9.995 – 10.000			9.980

CONROD + CRANKSHAFT

Unit: mm

ITEM	STANDARD	LIMIT
Conrod small end I.D.	14.003 – 14.011	14.040
Conrod deflection	—	3.0
Crank web to web width	36.0 ± 0.05	—
Crankshaft runout	—	0.05

OIL PUMP

ITEM	SPECIFICATION
Oil pump reduction ratio	30.000 (30/1)
Oil pump discharge rate	0.9 – 1.1 ml for 5 minutes at 3 000 r/min.

CLUTCH

Unit: mm

ITEM	STANDARD	LIMIT
Clutch wheel I.D.	110.00 – 110.15	110.50
Clutch shoe thickness	3.0	2.0
Clutch engagement	3 300 ± 200 r/min.	—
Clutch lock-up	4 500 ± 300 r/min.	—

TRANSMISSION

Unit: mm Except ratio

ITEM	STANDARD	LIMIT
Reduction ratio	Variable 2.768 – 1.005	—
Final reduction ratio	14.960 (51/15 × 66/15)	—
Drive belt width	16.9	15.9
	18.4	17.4
Driven face spring free length	110	104.5

CARBURETOR

ITEM		SPECIFICATION
Carburetor type		KEIHIN PWS14
Bore size		14 mm
I.D. No.		35EJ
Idle r/min.		1 900 ± 200 r/min.
Float height		5.1 ± 0.5 mm
Main jet	(M.J.)	#65
Jet needle	(J.N.)	N5GJ-3rd
Pilot jet	(P.J.)	#40
Air screw	(A.S.)	1¾ turns back
Throttle cable play		2 – 4 mm

ELECTRICAL

Unit: mm

ITEM		SPECIFICATION		NOTE
Spark plug		Type	NGK: BPR6HS DENSO: W20FPR-U	
		Gap	0.6 – 0.7	
Spark performance		Over 8 at 1 atm.		
Ignition coil resistance		Secondary	4 – 10 kΩ	Plug cap – B/W lead wire terminal
Generator coil resistance		Charging	0.2 – 1.5 Ω	Y – Ground
		Pick-up	100 – 270 Ω	R – Ground
Regulated voltage		13.5 – 15.5 V at 5 000 r/min.		
Generator Max. output		100 W at 5 000 r/min.		
Starter relay resistance		50 – 90 Ω		
Battery	Type designation	YT4L-BS		
	Capacity	12 V 10.8 kC (3 Ah)/10 HR		
Fuse size		10 A		

WATTAGE

Unit: W

ITEM		SPECIFICATION
Headlight	HI	35
	LO	35
Brake light/Taillight		21/5
Turn signal light		10
Speedometer light		1.2 × 2
Fuel meter light		1.2
Turn signal indicator light		2
Oil level indicator light		2
High beam indicator light		1.7
Trunk light		2

BRAKE + WHEEL

Unit: mm

ITEM	STANDARD		LIMIT
Brake lever play	Rear	15 – 20	—
Brake drum I.D.	Rear	—	120.7
Brake disc thickness	Front	4.0 ± 0.2	3.5
Brake disc runout	Front	—	0.30
Master cylinder bore	Front	11.000 – 11.043	—
Master cylinder piston diam.	Front	10.957 – 10.984	—
Brake caliper cylinder bore	Front	30.230 – 30.306	—
Brake caliper piston diam.	Front	30.150 – 30.200	—
Brake fluid type	DOT 4		—
Wheel rim runout	Axial	—	2.0
	Radial	—	2.0
Wheel axle runout	Front	—	0.25
Wheel rim size	Front	J12 × MT3.50	—
	Rear	J12 × MT3.50	—
Tire size	Front	120/70-12 51L	—
	Rear	130/70-12 56L	—
Tire type	Front	MICHELIN: DEXTER	—
	Rear	MICHELIN: DEXTER	—
Tire tread depth	Front	—	1.6
	Rear	—	1.6

SUSPENSION

Unit: mm

ITEM	STANDARD	LIMIT
Front fork stroke	77	—
Front fork spring free length	124.7	122
Rear wheel travel	60	—

TIRE PRESSURE

AY50S

COLD INFLATION TIRE PRESSURE	SOLO RIDING		
	kPa	kgf/cm²	psi
FRONT	125	1.25	18
REAR	175	1.75	25

AY50

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kgf/cm²	psi	kPa	kgf/cm²	psi
FRONT	125	1.25	18	125	1.25	18
REAR	175	1.75	25	230	2.30	33

FUEL + OIL

ITEM	SPECIFICATION	NOTE
Fuel type	Gasoline used should be graded 91 octane or higher. An unleaded gasoline is recommended.	
Fuel tank capacity	6.8 L	
Engine oil type	Use SUZUKI CCI SUPER OIL. If they are not available, use a good quality 2-stroke oil rated FC under JASO classification.	
Engine oil tank capacity	1.2 L	
Final gear oil type	SAE 10W-40	
Final gear oil capacity	130 ml	

AY50W AND AY50WS
CYLINDER + PISTON + PISTON RING

Unit: mm

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.035 – 0.045			0.120
Cylinder bore	41.010 – 41.025 Measure at 20 mm from the top surface			41.105
Piston diam.	40.970 – 40.985 Measure at 23 mm from the skirt end			40.890
Cylinder distortion	—			0.05
Cylinder head distortion	—			0.05
Piston ring free end gap	1st & 2nd	T	Approx. 4.5	3.6
		N	Approx. 3.0	2.4
Piston ring end gap	1st & 2nd	T& N	0.08 – 0.18	0.80
Piston ring to groove clearance	1st & 2nd		0.01 – 0.05	—
Piston pin bore	12.002 – 12.010			12.030
Piston pin O.D.	11.996 – 12.000			11.980

CONROD + CRANKSHAFT

Unit: mm

ITEM	STANDARD	LIMIT
Conrod small end I.D.	16.003 – 16.011	16.040
Conrod deflection	—	3.0
Crank web to web width	38.0 ± 0.05	—
Crankshaft runout	—	0.05

OIL PUMP

ITEM	SPECIFICATION
Oil pump reduction ratio	30.000 (30/1)
Oil pump discharge rate	0.8 – 1.0 ml for 5 minutes at 3 000 r/min.

CLUTCH

Unit: mm

ITEM	STANDARD	LIMIT
Clutch wheel I.D.	110.00 – 110.15	110.50
Clutch shoe thickness	3.0	2.0
Clutch engagement	4 000 ± 200 r/min.	—
Clutch lock-up	5 600 ± 300 r/min.	—

THERMOSTAT + RADIATOR + ENGINE COOLANT TEMP. SWITCH + ENGINE COOLANT

ITEM		STANDARD/SPECIFICATION	LIMIT
Thermostat valve opening temperature		Approx. 65 °C	—
Thermostat valve lift		Over 3 mm at 80 °C	—
Radiator reservoir cap valve opening pressure		100 kPa (1.0 kgf/cm^2)	—
Engine coolant temp. switch operating temperature	ON	Approx. 125 °C	—
	OFF	Approx. 118 °C	—
Engine coolant type		Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50:50.	—
Engine coolant including reserve		1 200 ml	—

TRANSMISSION

Unit: mm Except ratio

ITEM	STANDARD	LIMIT
Reduction ratio	Variable 2.975 – 1.033	—
Final reduction ratio	16.271 (51/15 × 67/14)	—
Drive belt width	18.4	17.4
Driven face spring free length	110	104.5

CARBURETOR

ITEM		SPECIFICATION
Carburetor type		KEIHIN PWS14
Bore size		14 mm
I.D. No.		35EA
Idle r/min.		1 900 ± 200 r/min.
Float height		5.1 ± 0.5 mm
Main jet	(M.J.)	#62
Jet needle	(J.N.)	N5GJ-2nd
Pilot jet	(P.J.)	#45
Air screw	(A.S.)	1½ turns back
Throttle cable play		2 – 4 mm

ELECTRICAL

Unit: mm

ITEM		SPECIFICATION		NOTE
Spark plug		Type	NGK: BPR6HS DENSO: W20FPR	
		Gap	0.6 – 0.7	
Spark performance		Over 8 at 1 atm.		
Ignition coil resistance		Secondary	4 – 10 kΩ	Plug cap – B/W lead wire terminal
Generator coil resistance		Charging	0.2 – 1.5 Ω	Y – Ground
		Pick-up	100 – 270 Ω	R – Ground
Regulated voltage		13.5 – 15.5 V at 5 000 r/min.		
Generator Max. output		100 W at 5 000 r/min.		
Starter relay resistance		50 – 90 Ω		
Battery	Type designation	YT4L-BS		
	Capacity	12 V 10.8 kC (3 Ah)/10 HR		
Fuse size		10 A		

WATTAGE

Unit: W

ITEM		SPECIFICATION
Headlight	HI	35
	LO	35
Brake light/Taillight		21/5
Turn signal light		10
Speedometer light		1.2 × 2
Fuel meter light		1.2
Turn signal indicator light		2
Oil level indicator light		2
Water temp. indicator light		2
High beam indicator light		1.2
Trunk light		2

BRAKE + WHEEL

Unit: mm

ITEM	STANDARD/SPECIFICATION		LIMIT
Brake disc thickness	Front	4.0 ± 0.2	3.5
	Rear	4.0 ± 0.2	3.5
Brake disc runout	Front & Rear	—	0.30
Master cylinder bore	Front	11.000 – 11.043	—
	Rear	12.000 – 12.043	—
Master cylinder piston diam.	Front	10.957 – 10.984	—
	Rear	11.957 – 11.984	—
Brake caliper cylinder bore	Front	30.230 – 30.306	—
	Rear	30.230 – 30.306	—
Brake caliper piston diam.	Front	30.150 – 30.200	—
	Rear	30.150 – 30.200	—
Brake fluid type	DOT 4		—
Wheel rim runout	Axial	—	2.0
	Radial	—	2.0
Wheel axle runout	Front	—	0.25
Wheel rim size	Front	J12 × MT3.50	—
	Rear	J13MC × MT3.50	—
Tire size	Front	120/70-12 51L	—
	Rear	130/60-13 M/C 53L	—
Tire type	Front	METZELER: ME 7 TEEN	—
	Rear	METZELER: ME 7 TEEN	—
Tire tread depth	Front	—	1.6
	Rear	—	1.6

SUSPENSION

Unit: mm

ITEM	STANDARD	LIMIT
Front fork stroke	77	—
Front fork spring free length	124.7	122
Rear wheel travel	60	—

TIRE PRESSURE

AY50WS

COLD INFLATION TIRE PRESSURE	SOLO RIDING		
	kPa	kgf/cm²	psi
FRONT	125	1.25	18
REAR	175	1.75	25

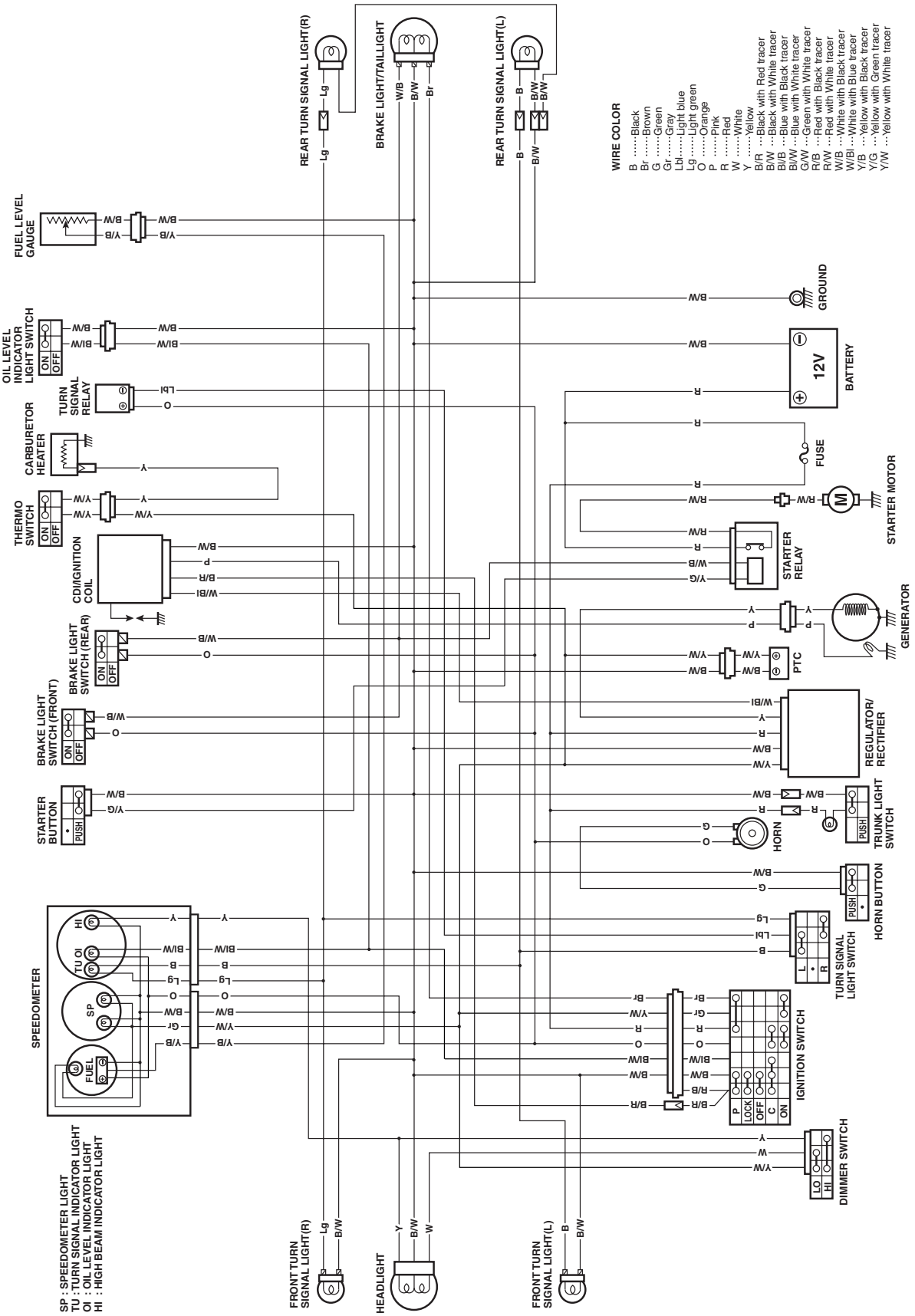
AY50W

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kgf/cm²	psi	kPa	kgf/cm²	psi
FRONT	125	1.25	18	125	1.25	18
REAR	175	1.75	25	230	2.30	33

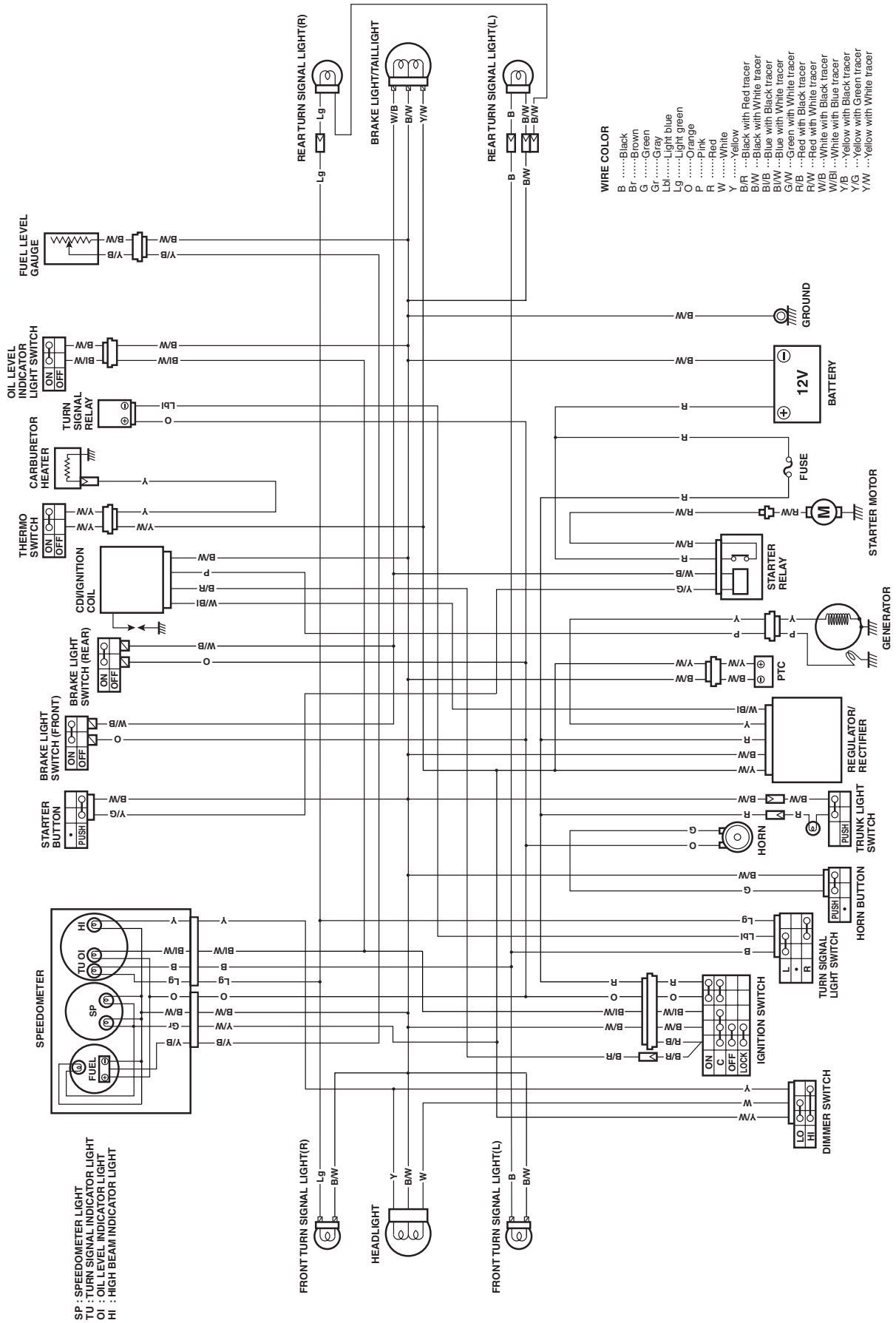
FUEL + OIL

ITEM	SPECIFICATION	NOTE
Fuel type	Gasoline used should be graded 91 octane or higher. An unleaded gasoline is recommended.	
Fuel tank capacity	6.8 L	
Engine oil type	Use SUZUKI CCI SUPER OIL. If they are not available, use a good quality 2-stroke oil rated FC under JASO classification.	
Engine oil tank capacity	1.2 L	
Final gear oil type	SAE 10W-40	
Final gear oil capacity	130 ml	

WIRING DIAGRAM
AY50 AND AY50S
P-02



P-19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REAR TURN SIGNAL LIGHT(L)
FUEL LEVEL GAUGE
OIL LEVEL INDICATOR LIGHT SWITCH
TURN SIGNAL RELAY
CARBURETOR HEATER
THERMO SWITCH
CDI/IGNITION COIL
BRAKE LIGHT SWITCH (REAR)
BRAKE LIGHT SWITCH (FRONT)
STARTER BUTTON
SPEEDOMETER
GROUND
BATTERY
12V
FUSE
STARTER MOTOR
STARTER RELAY
GENERATOR
PTC
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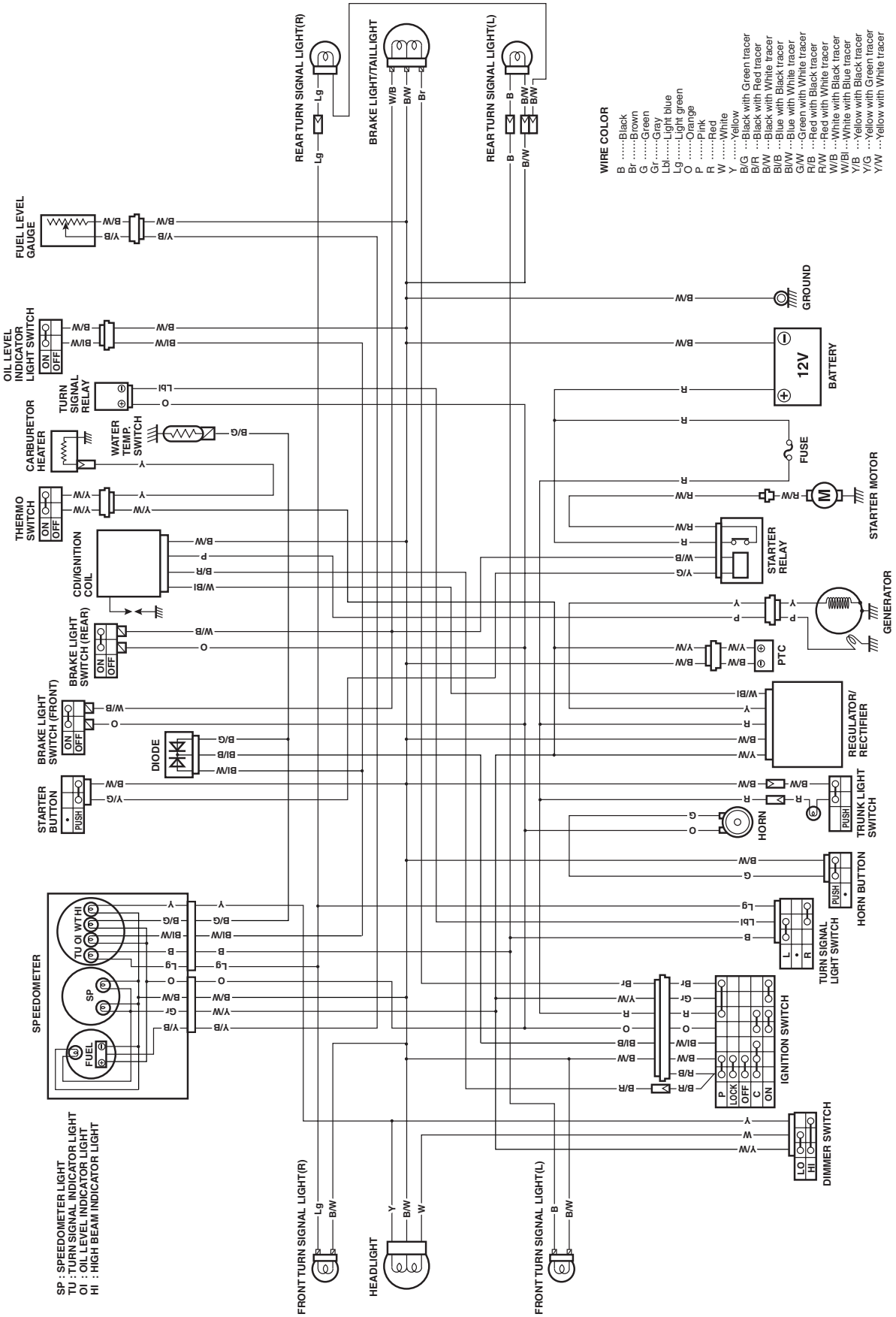
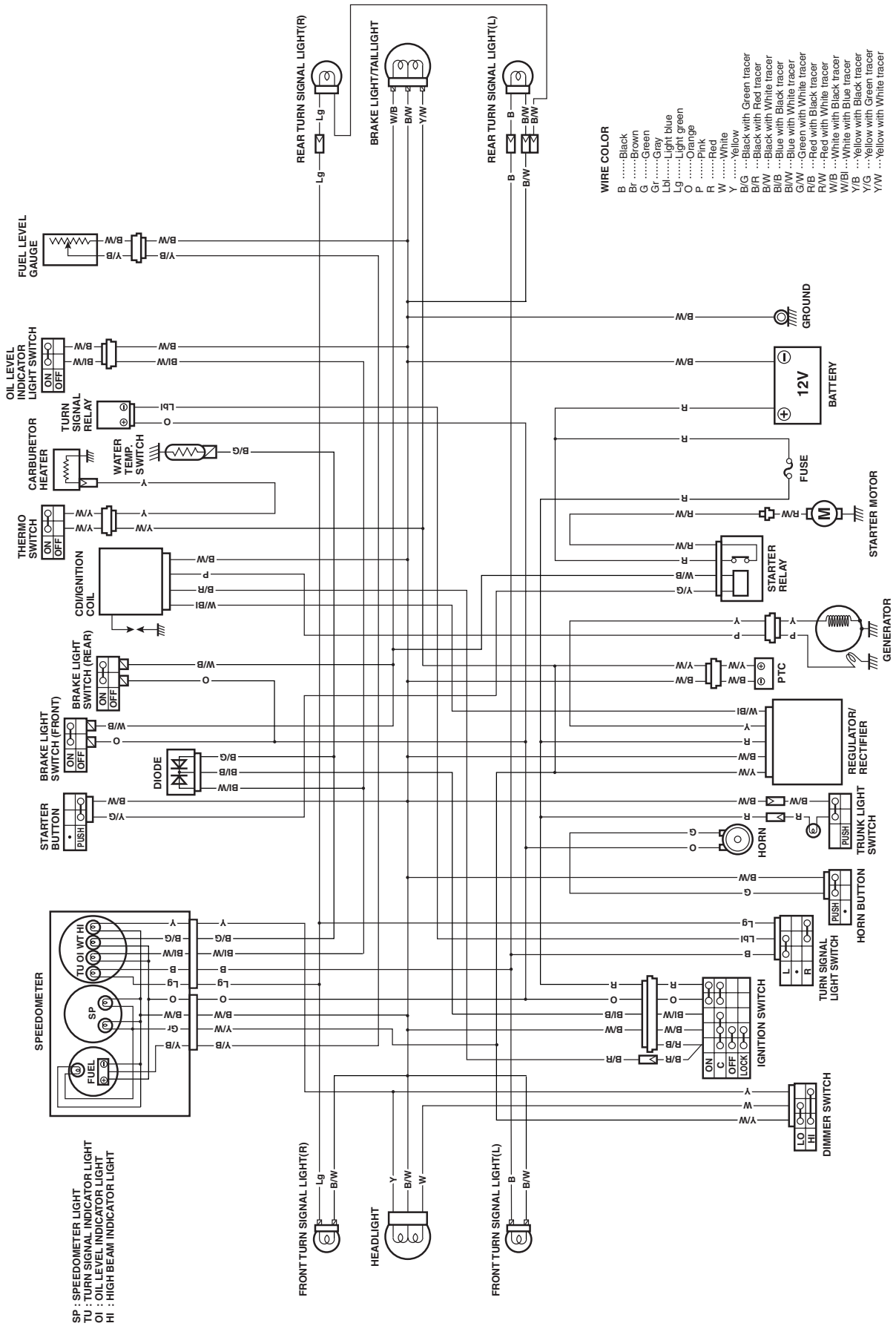
HORN
TRUNK LIGHT SWITCH
HORN BUTTON
TURN SIGNAL LIGHT SWITCH
IGNITION SWITCH
DIMMER SWITCH
FRONT TURN SIGNAL LIGHT(R)
HEADLIGHT
FRONT TURN SIGNAL LIGHT(L)
SP : SPEEDOMETER LIGHT
TU : TURN SIGNAL INDICATOR LIGHT
OI : OIL LEVEL INDICATOR LIGHT
HI : HIGH BEAM INDICATOR LIGHT

AY50W AND AY50WS

P-02



P-19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BRAKE LIGHT/TAILLIGHT
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GROUND
12V
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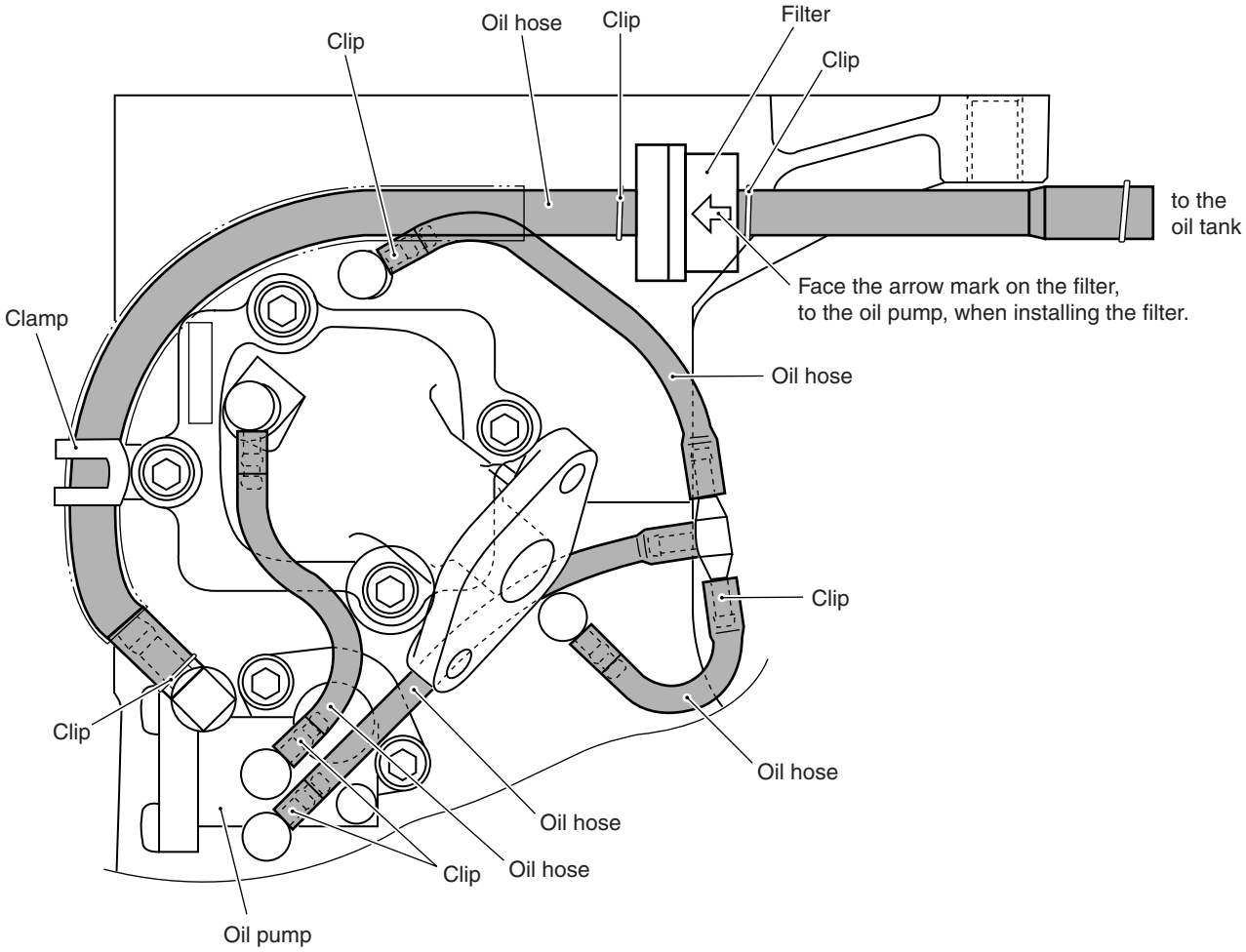
DIMMER SWITCH
FRONT TURN SIGNAL LIGHT(R)
HEADLIGHT
FRONT TURN SIGNAL LIGHT(L)
SP : SPEEDOMETER LIGHT
TU : TURN SIGNAL INDICATOR LIGHT
OI : OIL LEVEL INDICATOR LIGHT
HI : HIGH BEAM INDICATOR LIGHT

OIL HOSE ROUTING



AY50K4/WK4 ('04-MODEL)

This chapter describes specifications, service data and servicing procedures which differ from those of the AY50K3/WRK3 ('03-MODEL).

NOTE:
Please refer to the chapters 1 through 12 for details which are not given in this chapter.

CONTENTS

SPECIFICATIONS

AY50

DIMENSIONS AND DRY MASS

Overall length	1 865 mm (73.4 in)
Overall width	650 mm (25.6 in)
Overall height	1 125 mm (44.3 in)
Wheelbase	1 260 mm (49.6 in)
Ground clearance	105 mm (4.1 in)
Seat height	790 mm (31.1 in)
Dry mass	77 kg (169 lbs)

ENGINE

Type	2 stroke, Forced air-cooled
Intake system	Reed valve
Number of cylinders	1
Bore	41.0 mm (1.614 in)
Stroke	37.4 mm (1.472 in)
Displacement	49 cm^3 (3.0 cu. in)
Corrected compression ratio	6.5 : 1
Carburetor	KEIHIN PWS14
Air cleaner	Polyurethane foam element
Starter system	Electric and kick
Lubrication system	SUZUKI "CCI"
Idle speed	1 900 ± 200 r/min

DRIVE TRAIN

Clutch	Dry shoe, automatic, centrifugal type
Gearshifting	Automatic, variable ratio
Gear ratio, variable	Variable reduction ratio (2.768 – 1.005)
Final reduction ratio	14.960 (51/15 × 65/15)
Drive system	V-belt drive

CHASSIS

Front suspension	Inverted telescopic, coil spring
Rear suspension	Swingarm, coil spring, oil damped
Front suspension stroke	77 mm (3.0 in)
Front wheel travel	70 mm (2.8 in)
Rear wheel travel	60 mm (2.4 in)
Caster	25° 20'
Trail	76 mm (2.99 in)
Steering angle	45° (left and right)
Turning radius	1.9 m (6.2 ft)
Front brake	Disc brake
Rear brake	Drum brake
Front tire size	120/70-12 51L, tubeless
Rear tire size	130/70-12 56L, tubeless

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	14° B.T.D.C. at 4 000 rpm
Spark plug	NGK BPR6HS or DENSO W20FPR-U
Battery	12 V 10.8 kC (3 Ah)/10 HR
Generator	Flywheel magneto
Fuse	10 A
Headlight	12 V 35/35 W
Brake light/Taillight	12 V 21/5 W
License plate light	12 V 5 W
Turn signal light	12 V 10 W
Speedometer light	12 V 1.2 W × 2
Fuel level gauge light	12 V 1.2 W
High beam indicator light	12 V 1.2 W
Turn signal indicator light	12 V 2 W
Oil level indicator light	12 V 2 W
Trunk light	12 V 2 W

CAPACITIES

Fuel tank	6.8 L (1.8/1.5 US/Imp gal)
Engine oil tank	1.2 L (1.3/1.1 US/Imp qt)
Final gear oil, oil change	120 ml (4.1/4.2 US/Imp oz)
overhaul	130 ml (4.4/4.6 US/Imp oz)

AY50W

DIMENSIONS AND DRY MASS

Overall length	1 865 mm (73.4 in)
Overall width	650 mm (25.6 in)
Overall height	1 125 mm (44.3 in)
Wheelbase	1 260 mm (49.6 in)
Ground clearance	105 mm (4.1 in)
Seat height	790 mm (31.1 in)
Dry mass	83 kg (182 lbs)

ENGINE

Type	2 stroke, liquid-cooled
Intake system	Reed valve
Number of cylinders	1
Bore	41.0 mm (1.614 in)
Stroke	37.4 mm (1.472 in)
Displacement	49 cm^3 (3.0 cu. in)
Corrected compression ratio	8.1 : 1
Carburetor	KEIHIN PWS14
Air cleaner	Polyurethane foam element
Starter system	Electric and kick
Lubrication system	SUZUKI "CCI"
Idle speed	1 900 ± 200 r/min

DRIVE TRAIN

Clutch	Dry shoe, automatic, centrifugal type
Gearshifting	Automatic, variable ratio
Gear ratio, reduction ratio	Variable reduction ratio (2.975 – 1.033)
Final reduction ratio	16.271 (51/15 × 67/14)
Drive system	V-belt drive

CHASSIS

Front suspension	Inverted telescopic, coil spring
Rear suspension	Swingarm, coil spring, oil damped
Front suspension stroke	77 mm (3.0 in)
Front wheel travel	70 mm (2.8 in)
Rear wheel travel	60 mm (2.4 in)
Caster	25° 20'
Trail	76 mm (2.99 in)
Steering angle	45° (left and right)
Turning radius	1.9 m (6.2 ft)
Front brake	Disc brake
Rear brake	Disc brake
Front tire size	120/70-12 51L, tubeless
Rear tire size	130/60-13 M/C 53L, tubeless

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	14° B.T.D.C. at 4 000 rpm
Spark plug	NGK BPR6HS or DENSO W20FPR
Battery	12 V 10.8 kC (3 Ah)/10 HR
Generator	Flywheel magneto
Fuse	10 A
Headlight	12 V 35/35 W
Brake light/Taillight	12 V 21/5 W
Turn signal light	12 V 10 W
License plate light	12 V 5 W
Speedometer light	12 V 1.2 W × 2
Fuel level gauge light	12 V 1.2 W
Turn signal indicator light	12 V 2 W
High beam indicator light	12 V 1.2 W
Oil level indicator light	12 V 2 W
Coolant temperature check light	12 V 2 W
Trunk light	12 V 2 W

CAPACITIES

Fuel tank	6.8 L (1.8/1.5 US/Imp gal)
Engine oil tank	1.2 L (1.3/1.1 US/Imp qt)
Final gear oil, oil change	120 ml (4.1/4.2 US/Imp oz)
overhaul	130 ml (4.4/4.6 US/Imp oz)
Coolant	1 200 ml (2.5/2.1 US/Imp oz)

SERVICE DATA

AY50

CYLINDER + PISTON + PISTON RING

Unit: mm

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.06 – 0.07			0.120
Cylinder bore	41.005 – 41.020 Measure at 20 mm from the top surface.			41.075
Piston diam.	40.940 – 40.955 Measure at 15 mm from the skirt end.			40.885
Cylinder distortion	—			0.05
Cylinder head distortion	—			0.05
Piston ring free end gap	1st	R	Approx. 4.0	3.2
	2nd	R	Approx. 4.3	3.4
Piston ring end gap	1st & 2nd	R	0.10 – 0.25	0.80
Piston ring to groove clearance	1st		0.03 – 0.07	—
	2nd		0.02 – 0.06	—
Piston pin bore	10.002 – 10.010			10.030
Piston pin O.D.	9.995 – 10.000			9.980

CONROD + CRANKSHAFT

Unit: mm

ITEM	STANDARD	LIMIT
Conrod small end I.D.	14.003 – 14.011	14.040
Conrod deflection	—	3.0
Crank web to web width	36.0 ± 0.05	—
Crankshaft runout	—	0.05

OIL PUMP

ITEM	SPECIFICATION
Oil pump reduction ratio	30.000 (30/1)
Oil pump discharge rate	0.9 – 1.1 ml for 5 minutes at 3 000 r/min

CLUTCH

Unit: mm

ITEM	STANDARD	LIMIT
Clutch wheel I.D.	110.00 – 110.15	110.50
Clutch shoe thickness	3.0	2.0
Clutch engagement	3 300 ± 200 r/min	—
Clutch lock-up	4 500 ± 300 r/min	—

TRANSMISSION

Unit: mm (Except ratio)

ITEM	STANDARD	LIMIT
Reduction ratio	Variable 2.768 – 1.005	—
Final reduction ratio	14.960 (51/15 × 66/15)	—
Drive belt width	16.9	15.9
	18.4	17.4
Driven face spring free length	110	104.5

CARBURETOR

ITEM		SPECIFICATION
Carburetor type		KEIHIN PWS14
Bore size		14 mm
I.D. No.		35EJ
Idle r/min		1 900 ± 200 r/min
Float height		5.1 ± 0.5 mm
Main jet	(M.J.)	#65
Jet needle	(J.N.)	N5GJ-3rd
Pilot jet	(P.J.)	#40
Air screw	(A.S.)	1-3/4 turns back
Throttle cable play		2 – 4 mm

ELECTRICAL

Unit: mm

ITEM		SPECIFICATION		NOTE
Spark plug		Type	NGK: BPR6HS DENSO: W20FPR-U	
		Gap	0.6 – 0.7	
Spark performance		Over 8 at 1 atm.		
Ignition coil resistance		Secondary	4 – 10 kΩ	Plug cap – B/W lead wire terminal
Generator coil resistance		Charging	0.2 – 1.5 Ω	Y – Ground
		Pick-up	100 – 270 Ω	R – Ground
Regulated voltage		13.5 – 15.5 V at 5 000 r/min		
Generator Max. output		100 W at 5 000 r/min		
Starter relay resistance		50 – 90 Ω		
Battery	Type designation	YT4L-BS		
	Capacity	12 V 10.8 kC (3 Ah)/10 HR		
Fuse size		10 A		

WATTAGE

Unit: W

ITEM		SPECIFICATION
Headlight	HI	35
	LO	35
Brake light/Taillight		21/5
License plate light		5
Turn signal light		10
Speedometer light		1.2 × 2
Fuel meter light		1.2
Turn signal indicator light		2
Oil level indicator light		2
High beam indicator light		1.7
Trunk light		2

BRAKE + WHEEL

Unit: mm

ITEM	STANDARD		LIMIT
Brake lever play	Rear	15 – 20	—
Brake drum I.D.	Rear	—	120.7
Brake disc thickness	Front	4.0 ± 0.2	3.5
Brake disc runout	Front	—	0.30
Master cylinder bore	Front	11.000 – 11.043	—
Master cylinder piston diam.	Front	10.957 – 10.984	—
Brake caliper cylinder bore	Front	30.230 – 30.306	—
Brake caliper piston diam.	Front	30.150 – 30.200	—
Brake fluid type	DOT 4		—
Wheel rim runout	Axial	—	2.0
	Radial	—	2.0
Wheel axle runout	Front	—	0.25
Wheel rim size	Front	J12 × MT3.50	—
	Rear	J12 × MT3.50	—
Tire size	Front	120/70-12 51L	—
	Rear	130/70-12 56L	—
Tire type	Front	MICHELIN: DEXTER	—
	Rear	MICHELIN: DEXTER	—
Tire tread depth	Front	—	1.6
	Rear	—	1.6

SUSPENSION

Unit: mm

ITEM	STANDARD	LIMIT
Front fork stroke	77	—
Front fork spring free length	124.7	122
Rear wheel travel	60	—

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kgf/cm^2	psi	kPa	kgf/cm^2	psi
FRONT	125	1.25	18	125	1.25	18
REAR	175	1.75	25	230	2.30	33

FUEL + OIL

ITEM	SPECIFICATION	NOTE
Fuel type	Gasoline used should be graded 91 octane or higher. An unleaded gasoline is recommended.	
Fuel tank capacity	6.8 L	
Engine oil type	Use SUZUKI CCI SUPER OIL. If they are not available, use a good quality 2-stroke oil rated FC under JASO classification.	
Engine oil tank capacity	1.2 L	
Final gear oil type	SAE 10W-40	
Final gear oil capacity	130 ml	

AY50W

CYLINDER + PISTON + PISTON RING

Unit: mm

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.035 – 0.045			0.120
Cylinder bore	41.010 – 41.025 Measure at 20 mm from the top surface.			41.105
Piston diam.	40.970 – 40.985 Measure at 23 mm from the skirt end.			40.890
Cylinder distortion	—			0.05
Cylinder head distortion	—			0.05
Piston ring free end gap	1st & 2nd	T	Approx. 4.5	3.6
		N	Approx. 3.0	2.4
Piston ring end gap	1st & 2nd	T& N	0.08 – 0.18	0.80
Piston ring to groove clearance	1st & 2nd		0.01 – 0.05	—
Piston pin bore	12.002 – 12.010			12.030
Piston pin O.D.	11.996 – 12.000			11.980

CONROD + CRANKSHAFT

Unit: mm

ITEM	STANDARD	LIMIT
Conrod small end I.D.	16.003 – 16.011	16.040
Conrod deflection	—	3.0
Crank web to web width	38.0 ± 0.05	—
Crankshaft runout	—	0.05

OIL PUMP

ITEM	SPECIFICATION
Oil pump reduction ratio	30.000 (30/1)
Oil pump discharge rate	0.8 – 1.0 ml for 5 minutes at 3 000 r/min

CLUTCH

Unit: mm

ITEM	STANDARD	LIMIT
Clutch wheel I.D.	110.00 – 110.15	110.50
Clutch shoe thickness	3.0	2.0
Clutch engagement	4 000 ± 200 r/min	—
Clutch lock-up	5 600 ± 300 r/min	—

THERMOSTAT + RADIATOR + ENGINE COOLANT TEMP. SWITCH + ENGINE COOLANT

ITEM		STANDARD/SPECIFICATION	LIMIT
Thermostat valve opening temperature		Approx. 65 °C	—
Thermostat valve lift		Over 3 mm at 80 °C	—
Radiator reservoir cap valve opening pressure		100 kPa (1.0 kgf/cm²)	—
Engine coolant temp. switch operating temperature	ON	Approx. 125 °C	—
	OFF	Approx. 118 °C	—
Engine coolant type		Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50:50.	—
Engine coolant including reserve		1 200 ml	—

TRANSMISSION

Unit: mm (Except ratio)

ITEM	STANDARD	LIMIT
Reduction ratio	Variable 2.975 – 1.033	—
Final reduction ratio	16.271 (51/15 × 67/14)	—
Drive belt width	18.4	17.4
Driven face spring free length	110	104.5

CARBURETOR

ITEM		SPECIFICATION
Carburetor type		KEIHIN PWS14
Bore size		14 mm
I.D. No.		35EA
Idle r/min		1 900 ± 200 r/min
Float height		5.1 ± 0.5 mm
Main jet	(M.J.)	#62
Jet needle	(J.N.)	N5GJ-2nd
Pilot jet	(P.J.)	#45
Air screw	(A.S.)	1-1/2 turns back
Throttle cable play		2 – 4 mm

ELECTRICAL

Unit: mm

ITEM		SPECIFICATION		NOTE
Spark plug		Type	NGK: BPR6HS DENSO: W20FPR	
		Gap	0.6 – 0.7	
Spark performance		Over 8 at 1 atm.		
Ignition coil resistance		Secondary	4 – 10 kΩ	Plug cap – B/W lead wire terminal
Generator coil resistance		Charging	0.2 – 1.5 Ω	Y – Ground
		Pick-up	100 – 270 Ω	R – Ground
Regulated voltage		13.5 – 15.5 V at 5 000 r/min		
Generator Max. output		100 W at 5 000 r/min		
Starter relay resistance		50 – 90 Ω		
Battery	Type designation	YT4L-BS		
	Capacity	12 V 10.8 kC (3 Ah)/10 HR		
Fuse size		10 A		

WATTAGE

Unit: W

ITEM		SPECIFICATION
Headlight	HI	35
	LO	35
Brake light/Taillight		21/5
Turn signal light		10
License plate light		5
Speedometer light		1.2 × 2
Fuel meter light		1.2
Turn signal indicator light		2
Oil level indicator light		2
Water temp. indicator light		2
High beam indicator light		1.2
Trunk light		2

BRAKE + WHEEL

Unit: mm

ITEM	STANDARD/SPECIFICATION		LIMIT
Brake disc thickness	Front	4.0 ± 0.2	3.5
	Rear	4.0 ± 0.2	3.5
Brake disc runout	Front & Rear	—	0.30
Master cylinder bore	Front	11.000 – 11.043	—
	Rear	12.000 – 12.043	—
Master cylinder piston diam.	Front	10.957 – 10.984	—
	Rear	11.957 – 11.984	—
Brake caliper cylinder bore	Front	30.230 – 30.306	—
	Rear	30.230 – 30.306	—
Brake caliper piston diam.	Front	30.150 – 30.200	—
	Rear	30.150 – 30.200	—
Brake fluid type	DOT 4		—
Wheel rim runout	Axial	—	2.0
	Radial	—	2.0
Wheel axle runout	Front	—	0.25
Wheel rim size	Front	J12 × MT3.50	—
	Rear	J13MC × MT3.50	—
Tire size	Front	120/70-12 51L	—
	Rear	130/60-13 M/C 53L	—
Tire type	Front	METZELER: ME 7 TEEN	—
	Rear	METZELER: ME 7 TEEN	—
Tire tread depth	Front	—	1.6
	Rear	—	1.6

SUSPENSION

Unit: mm

ITEM	STANDARD	LIMIT
Front fork stroke	77	—
Front fork spring free length	124.7	122
Rear wheel travel	60	—

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kgf/cm²	psi	kPa	kgf/cm²	psi
FRONT	125	1.25	18	125	1.25	18
REAR	175	1.75	25	230	2.30	33

FUEL + OIL

ITEM	SPECIFICATION	NOTE
Fuel type	Gasoline used should be graded 91 octane or higher. An unleaded gasoline is recommended.	
Fuel tank capacity	6.8 L	
Engine oil type	Use SUZUKI CCI SUPER OIL. If they are not available, use a good quality 2-stroke oil rated FC under JASO classification.	
Engine oil tank capacity	1.2 L	
Final gear oil type	SAE 10W-40	
Final gear oil capacity	130 ml	

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