



YAMAHA

1991 - 2000

MOTORCYCLE

SERVICE MANUAL

**Model : CY50B, CY50D, CY50E, CY50F,
CY50G, CY50H, CY50J, CY50M, SH50G**

3SA281972000



**CY50B '91
SERVICE MANUAL**
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NOTICE

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

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

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

PARTICULARLY IMPORTANT INFORMATION

This material is distinguished by the following notation.



The Safety Alert Symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

WARNING

Failure to follow WARNING instructions could result in severe injury or death to the scooter operator, a bystander, or a person inspecting or repairing the scooter.

CAUTION:

A CAUTION indicates special precautions that must be taken to avoid damage to the scooter.

NOTE:

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

HOW TO USE THIS MANUAL

CONSTRUCTION OF THIS MANUAL

This manual consists of chapters for the main categories of subjects. (See "Illustrated symbols")

- 1st title ① : This is a chapter with its symbol on the upper right of each page.
- 2nd title ② : This title appears on the upper of each page on the left of the chapter symbol. (For the chapter "Periodic inspection and adjustment" the 3rd title appears.)
- 3rd title ③ : This is a final title.

MANUAL FORMAT

All of the procedures in this manual are organized in a sequential, step-by-step format. The information has been compiled to provide the mechanic with an easy to read, handy reference that contains comprehensive explanations of all disassembly, repair, assembly, and inspections.

A set of particularly important procedure ④ is placed between a line of asterisks "*" with each procedure preceded by "•".

IMPORTANT FEATURES

- Data and a special tool are framed in a box preceded by a relevant symbol ⑤ .
- An encircled numeral ⑥ indicates a part name, and an encircled alphabetical letter data or an alignment mark ⑦ , the others being indicated by an alphabetical letter in a box ⑧ .
- A condition of a faulty component will precede an arrow symbol and the course of action required the symbol ⑨ .

EXPLODED DIAGRAM

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

① INSPECTION AND REPAIR ENG

② 2 Remove:
• Crankshafts ①
Use the crankcase separating tool ②

③ Crankcase separating tool: YU-01135

④ INSPECTION AND REPAIR
CYLINDER HEAD
1. Eliminate:
• Carbon deposits
Use a rounded scraper
Take care to avoid damaging the spark plug threads. Do not use a sharp instrument.
Avoid scratching the aluminum.
NOTE:
2. Measure:
• Cylinder head warpage
Out of specification → Resurface.
Warpage limit:
0.02 mm (0.001 in.)

⑤ Warpage measurement and resurfacing step:
• Attach a straight edge ① and a thickness gauge ② on the cylinder head.
• Measure the warpage.
• If the warpage is out of specification, resurface the cylinder head.
• Place a 400 ~ 600 grit wet sandpaper on the surface plate, and resurface the head using a figure-eight sanding pattern.
NOTE:
Rotate the head several times to avoid removing too much material from one side.

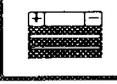
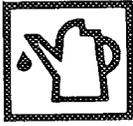
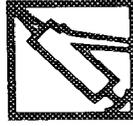
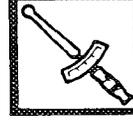
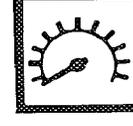
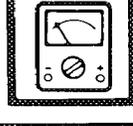
⑥ FRONT FORK CHAS

⑦ INSPECTION:
1. Inspect:
• Inner fork tube ①
• Outer fork tube ②
Scratches/Bends/Damage → Replace
Do not attempt to straighten a bent inner fork tube as this may dangerously weaken the tube.
2. Inspect:
• Dust seal
• Grommets
Scratches/Damage → Replace

⑧ 3. Measure:
• Fork spring free length ①
Out of specification → Replace
Fork spring free length:
418.5 mm (16.5 in.)
Minimum free length:
410 mm (16.1 in.)

⑨ 4. Install:
• Drive chain
• Join drive chain
• Clip drive chain
Make sure that the clip ① is installed in the correct direction. Otherwise, the drive chain will be separated.

5. Lubricate:
• Drive chain
Chain lube:
Yamaha chain lube or equivalent

<p>①</p> <p>GEN INFO</p> 	<p>②</p> <p>SPEC</p> 
<p>③</p> <p>INSP ADJ</p> 	<p>④</p> <p>ENG</p> 
<p>⑤</p> <p>CARB</p> 	<p>⑥</p> <p>CHAS</p> 
<p>⑦</p> <p>ELEC</p> 	<p>⑧</p> <p>TRBL SHTG</p> 
<p>⑨</p> 	<p>⑩</p> 
<p>⑪</p> 	<p>⑫</p> 
<p>⑬</p> 	<p>⑭</p> 
<p>⑮</p> 	
<p>⑯</p> 	<p>⑰</p> 
<p>⑱</p> 	<p>⑳</p> 
<p>㉑</p> 	<p>㉒</p> 

ILLUSTRATED SYMBOLS

(Refer to the illustration)

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

- ① General information
- ② Specifications
- ③ Periodic inspection and adjustment
- ④ Engine
- ⑤ Carburetion
- ⑥ Chassis
- ⑦ Electrical
- ⑧ Troubleshooting

Illustrated symbols ⑨ to ⑮ are used to identify the specifications appearing in the text.

- ⑨ Filling fluid
- ⑩ Lubricant
- ⑪ Special tool
- ⑫ Tightening
- ⑬ Wear limit, clearance
- ⑭ Engine speed
- ⑮ Ω, V, A

Illustrated symbols ⑯ to ㉒ in the exploded diagram indicate grade of lubricant and location of lubrication point.

- ⑯ Apply engine oil
- ⑰ Apply gear oil
- ⑱ Apply molybdenum disulfide oil
- ⑲ Apply wheel bearing grease
- ⑳ Apply lightweight lithium-soap base grease
- ㉑ Apply molybdenum disulfide grease
- ㉒ Apply locking agent (LOCTITE®)



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**CHAPTER 1.
GENERAL INFORMATION**

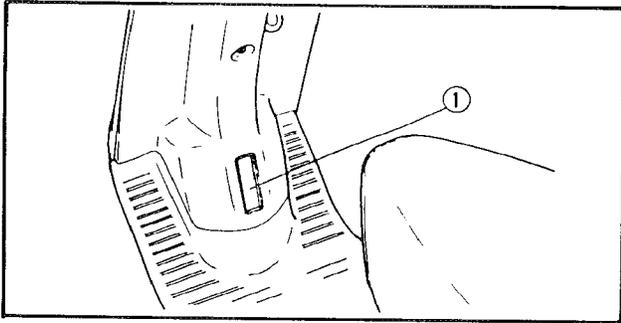
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GENERAL INFORMATION



SCOOTER IDENTIFICATION

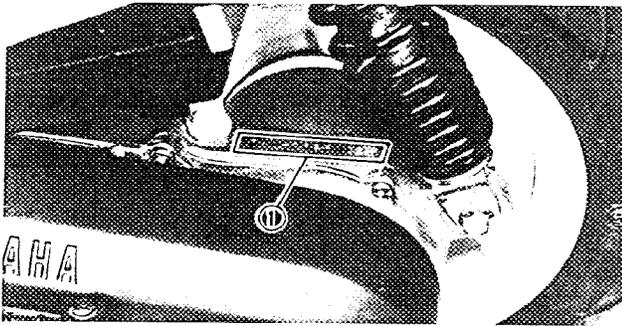
VEHICLE IDENTIFICATION NUMBER

The vehicle identification number ① is stamped into the frame.

NOTE:

The vehicle identification number is used to identify your scooter and may be used to register your scooter with the licensing authority in your state.

Starting serial number:
JYA3SAN0 * MA000101



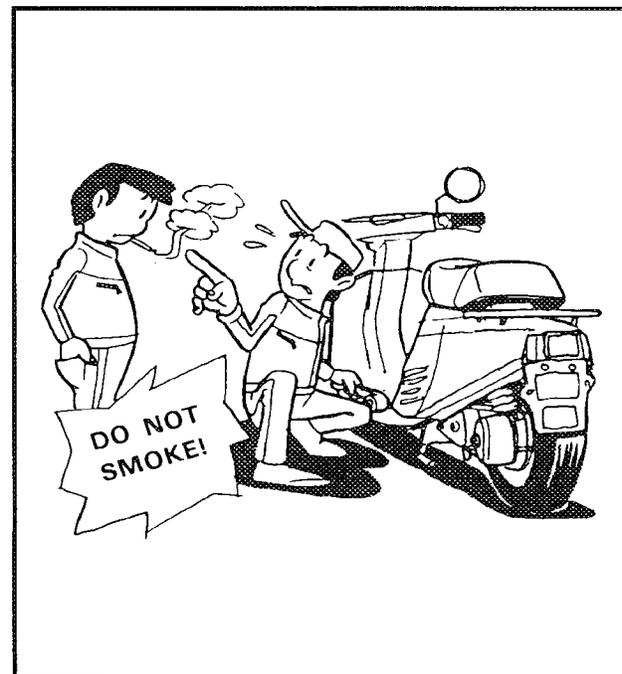
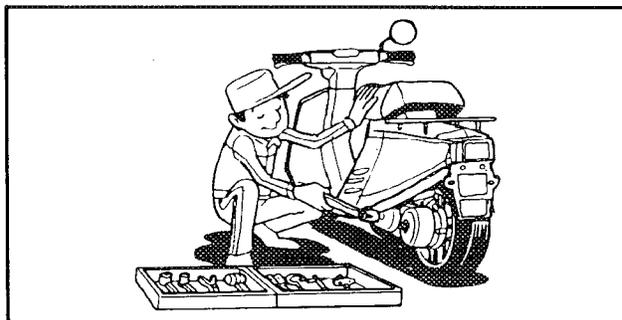
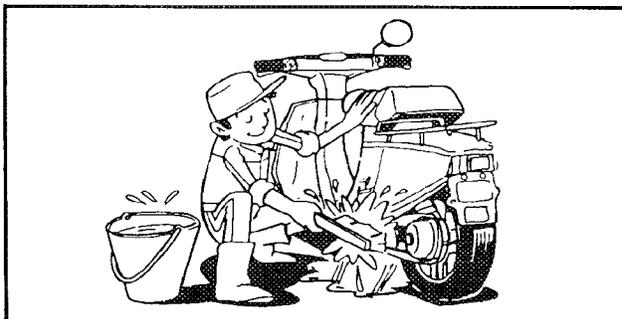
ENGINE SERIAL NUMBER

The engine serial number ① is stamped into the crankcase.

Starting serial number:
3SA-000101

NOTE:

- The first three digits of these numbers are for model identifications; the remaining digits are the unit production number.
- Designs and specifications are subject to change without notice.



IMPORTANT INFORMATION

PREPARATION FOR REMOVAL AND DISASSEMBLY

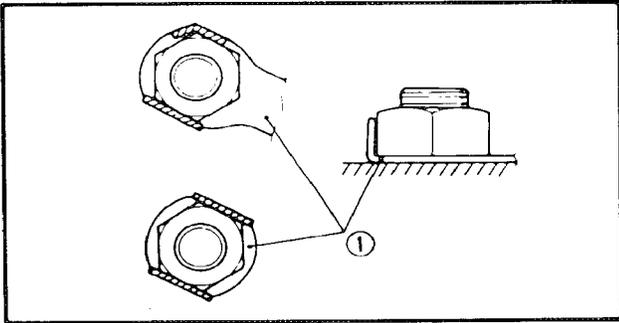
1. Remove all dirt, mud, dust and foreign material before removal and disassembly.
2. Use proper tools and cleaning equipment. Refer to "SPECIAL TOOL".
3. When disassembling the scooter, keep mated parts together. This includes gears, cylinders, pistons and other mated parts that have been "mated" through normal wear. Mated parts must be reused as an assembly or replaced.
4. During the scooter disassembly, clean all parts and place them in trays in the order of disassembly. This will speed up assembly time and help assure that all parts are correctly reinstalled.
5. Keep away from fire.

ALL REPLACEMENT PARTS

1. Use only genuine Yamaha parts for all replacements. Use oil and/or grease recommended by Yamaha for assembly and adjustment. Other brands may be similar in function and appearance, but inferior in quality.

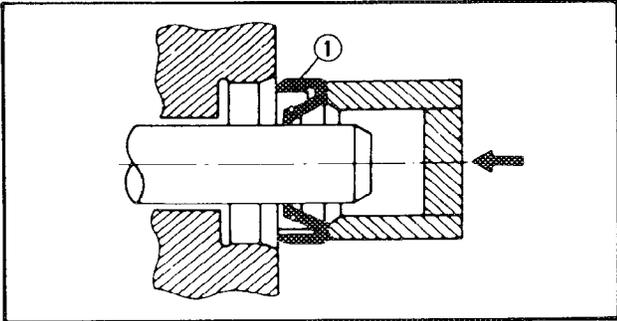
GASKETS, OIL SEALS, AND O-RINGS

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



LOCK WASHERS/PLATES AND COTTER PINS

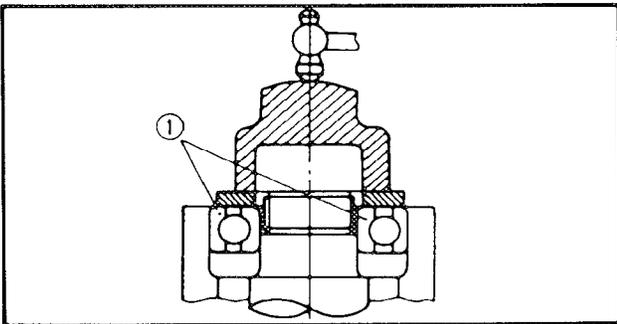
1. All lock washers/plates ① and cotter pins must be replaced when they are removed. Lock tab(s) should be bent along the bolt or nut flat(s) after the bolt or nut has been properly tightened.



BEARINGS AND OIL SEALS

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

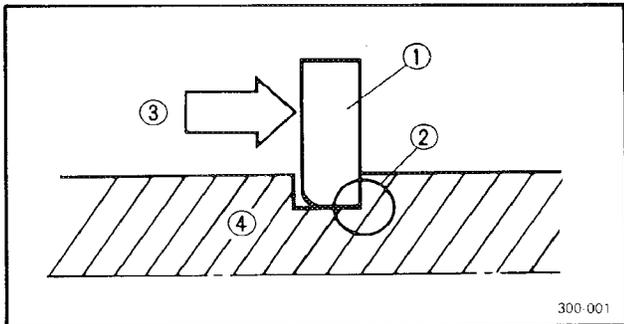
① Oil seal



CAUTION:

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

① Bearing



CIRCLIPS

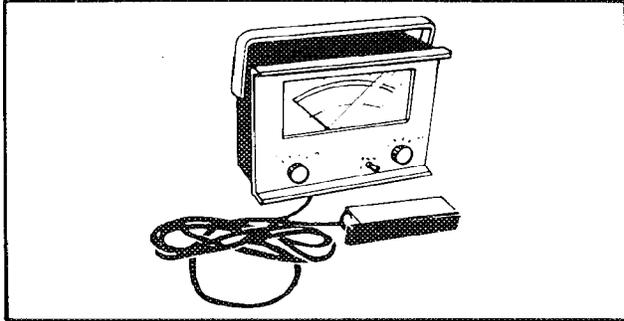
1. All circlips should be inspected carefully before reassembly. Always replace piston pin clips after one use. Replace distorted circlips. When installing a circlip ①, make sure that the sharp edged corner ② is positioned opposite to the thrust ③ it receives. See the sectional view.

④ Shaft

300-001

SPECIAL TOOLS

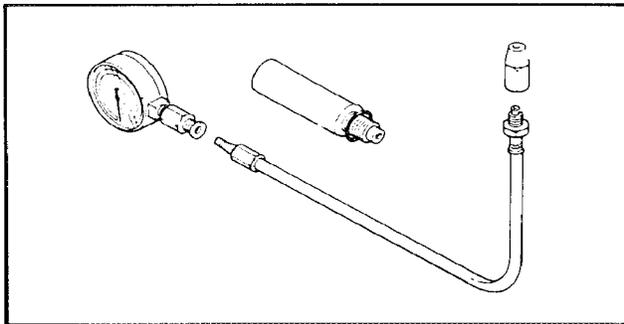
The proper special tools are necessary for complete and accurate tune-up and assembly. Using the correct special tool will help prevent damage caused by the use of improper tools or improvised techniques.



FOR TUNE UP

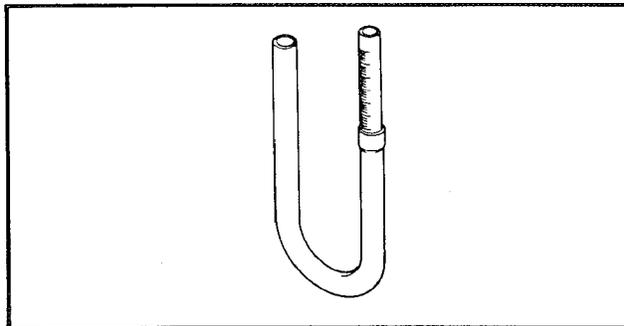
1. Inductive Tachometer
P/N. YU-08036-A

This tool is needed for detecting engine rpm.



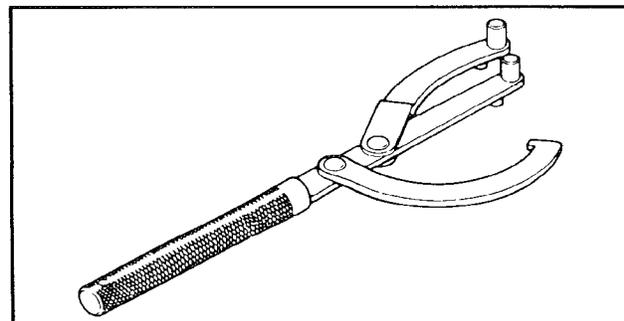
2. Compression Gauge
P/N. YU-33223

This gauge is used to measure engine compression.



3. Fuel level gauge
P/N. YM-01312-A

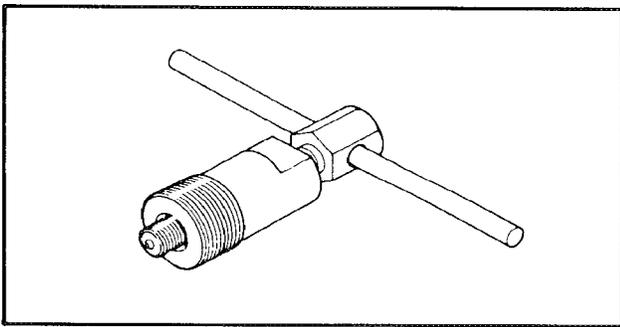
This gauge is used to measure the fuel level in the float chamber.



FOR ENGINE SERVICE

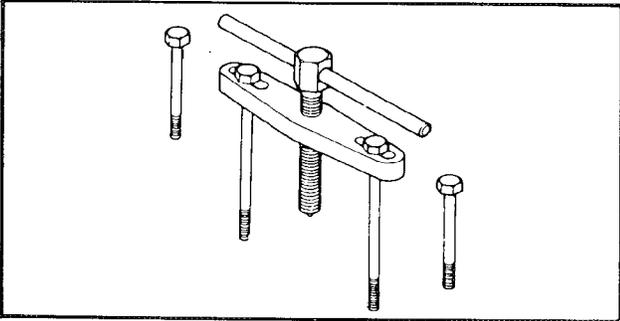
1. Flywheel Holding Tool
P/N. YU-01235

This tool is used to hold the flywheel magneto and clutch assembly when removing or installing the securing nut.



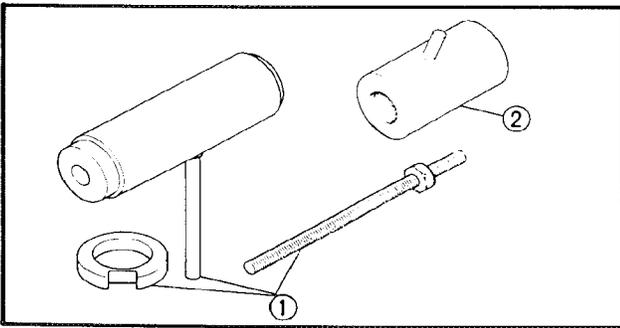
2. Flywheel Magneto Puller
P/N. YM-01189

This tool is used to remove the flywheel.



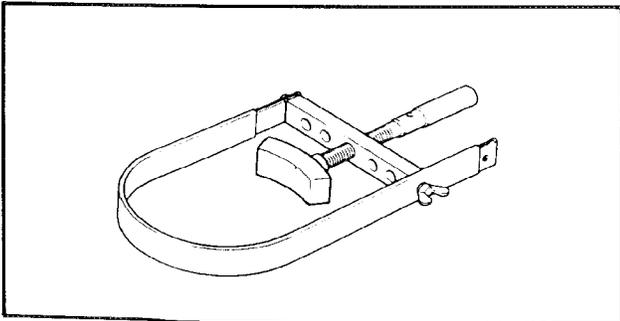
3. Crankcase Separating Tool
P/N. YU-01135

This tool is used to remove the crankshaft or separate the crankcase.



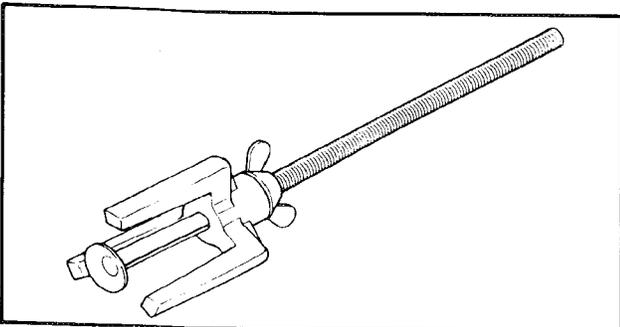
4. Crankshaft Installing Set
P/N. YU-90050- ①
Adapter (M10)
P/N. YM-90062- ②

This tools are used to install the crankshaft.



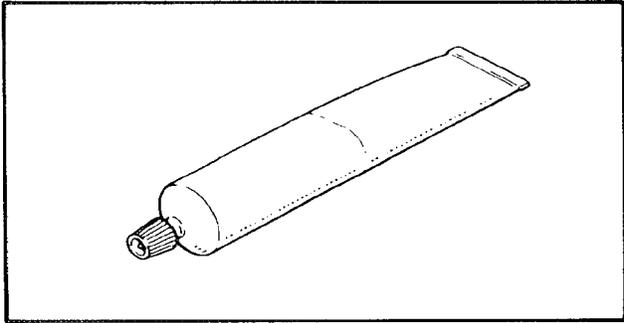
5. Sheave Holder
P/N. YS-01880

This tool is used when holding the clutch hub.



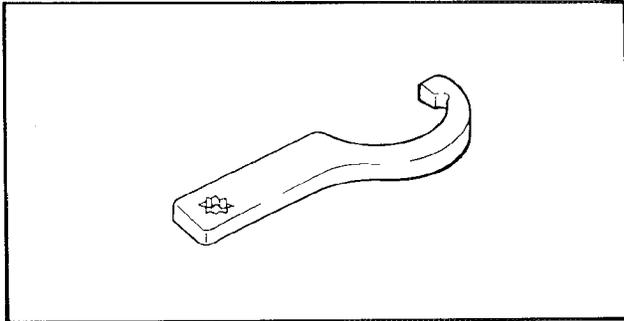
6. Clutch Spring Holder
P/N. YS-28891

This tool is used to disassembly and assembly the secondary sheave.



7. Quick Gasket®
P/N. ACC-11001-01
YAMAHA Bond No. 1215

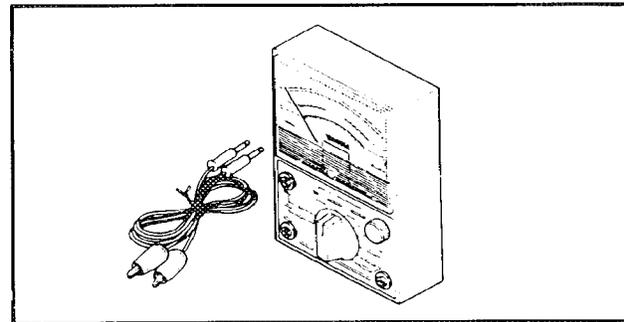
This sealant (Bond) is used for crankcase mating surfaces, etc.



FOR CHASSIS SERVICE

1. Ring Nut Wrench
P/N. YU-33975

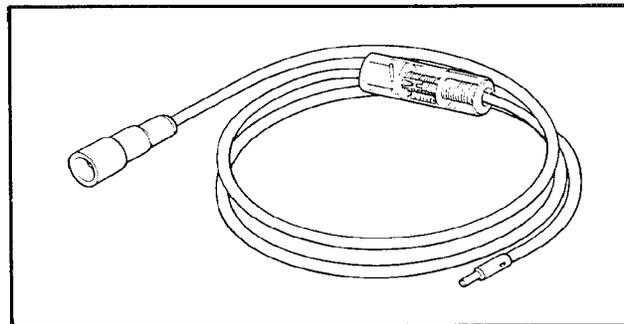
This tool is used to loosen and tighten the steering ring nut.



FOR ELECTRICAL COMPONENTS

1. Pocket Tester
P/N. YU-03112

This instrument is invaluable for electrical system inspection and adjustment.



2. Dynamic spark tester
P/N. YM-34487

This instrument is necessary for checking the ignition system components.

**CHAPTER 2.
SPECIFICATIONS**

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SPECIFICATIONS

GENERAL SPECIFICATIONS

Model	CY50B
Model Code Number	3SA
Vehicle Identification Number	JYA3SAN0 * MA000101
Engine Starting Number	3SA-000101
Dimensions:	
Overall Length	1,645 mm (64.8 in)
Overall Width	630 mm (24.8 in)
Overall Height	980 mm (38.6 in)
Seat Height	710 mm (28.0 in)
Wheelbase	1,115 mm (43.9 in)
Minimum Ground Clearance	80 mm (3.1 in)
Basic Weight:	
With Oil and Full Fuel Tank	65 kg (143 lb)
Minimum Turning Radius:	1,600 mm (63 in)
Engine:	
Engine Type	Air cooled 2-stroke, gasoline
Cylinder Arrangement	Single cylinder, Vertical
Displacement	49 cm ³
Bore x Stroke	40.0 x 39.2 mm (1.575 x 1.543 in)
Compression Ratio	6.9 : 1
Starting System	Electric and kick starter
Lubrication System	Separate lubrication (Yamaha Autolube)
Oil Type or Grade:	
Engine Oil	Yamalube2 or equivalent air-cooled, 2-stroke engine oil
Transmission Oil	SAE 10W30 type SE motor oil
Oil Capacity:	
Oil Tank (engine oil)	0.8 L (0.7 Imp qt, 0.84 US qt)
Transmission Oil:	
Periodic Oil Change	0.10 L (0.09 Imp qt, 0.11 US qt)
Total Amount	0.11 L (0.10 Imp qt, 0.12 US qt)
Air Filter	Wet type element
Fuel:	
Type	Regular gasoline
Tank Capacity	3.5 L (0.77 Imp gal, 0.92 US gal)

Model	CY50B	
Carburetor: Type/Manufacturer	Y14P/TEIKEI KIKAKI	
Spark Plug: Type/Manufacturer Gap	BPR7HS/NGK or W22FPR-U/ND 0.6 ~ 0.7 mm (0.024 ~ 0.028 in)	
Clutch Type	Dry, Centrifugal automatic	
Transmission: Primary Reduction System Primary Reduction Ratio Secondary Reduction System Secondary Reduction Ratio Transmission Type Operation	Helical gear 48/13 (3.692) Spur gear 38/11 (3.455) V-belt Automatic	
Chassis: Frame Type Caster Angle Trail	Steel tube underbone 26.5° 72 mm (2.83 in)	
Tire: Type Size Manufacture Tire pressure (cold tire)	Front	Rear
	Tubuleless MB38/C-922 80/90-10 34J INOUE/CHENGSHIN 125 kPa (1.25 kg/cm ² , 18 psi)	Tubeless MB38/C-922 80/90-10 34J INOUE/CHENGSHIN 200 kPa (2.00 kg/cm ² , 29 psi)
Brake: Front Brake Type Operation Rear Brake Type Operation	Drum brake Right hand operation Drum brake Left hand operation	
Suspension: Front Suspension Rear Suspension	Telescopic fork Unit swing	
Shock Absorber: Front Rear	Coil spring Coil spring/Oil damper	
Wheel Travel: Front Wheel Travel Rear Wheel Travel	42 mm (1.65 in) 42 mm (1.65 in)	

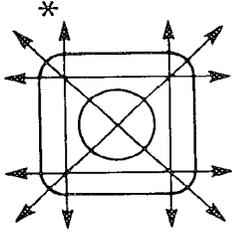
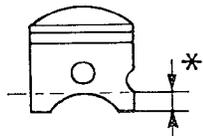
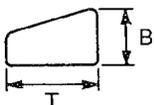
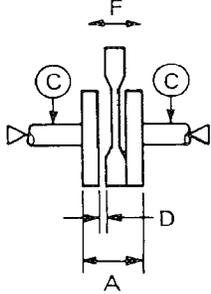
GENERAL SPECIFICATIONS



A-

Model	CY50B
Electrical: Ignition System Generator System Battery Type or Model Battery Capacity	CDI Flywheel magneto YT4L-BS/GT4L-BS 12V 4AH
Headlight type:	Bulb type
Bulb Wattedge x Quantity: Headlight Tail/Brake light Flasher light Meter light	12V 25W/25W X 1 12V 5W/21W X 1 12V 10W X 4 12W 3.4W X 1
Indicator Light Wattage x Quantity: "TURN" "HIGH BEAM" "OIL"	12V 1.7W X 1 12V 1.7W X 1 12V 3.4W X 1

MAINTENANCE SPECIFICATIONS
ENGINE

Model	CY50B
<p>Cylinder Head: Warp Limit</p> 	<p>0.02 mm (0.00079 in) * Lines indicate straightedge measurement</p>
<p>Cylinder: Bore Size <Limit> Taper Limit Out of Round Limit</p>	<p>39.993 ~ 40.012 mm (1.575 in) <40.1 mm (1.579 in)> 0.05 mm (0.002 in) 0.01 mm (0.0004 in)</p>
<p>Piston: Piston Size Measuring Point *</p>  <p>Piston Clearance <Limit> Oversize: 1st 2nd Piston Pin Bore Size</p>	<p>39.952 ~ 39.972 mm (1.573 ~ 1.574 in) 5 mm (0.2 in)</p> <p>0.034 ~ 0.047 mm (0.0013 ~ 0.0018 in) <0.1 mm (0.004 in)> 40.25 mm (1.585 in) 40.50 mm (1.594 in) 10.004 ~ 10.015 mm (0.3939 ~ 0.3943 in)</p>
<p>Piston Pin: Outside Diameter Piston Pin Clearance <Limit></p>	<p>9.996 ~ 10.000 mm (0.3935 ~ 0.3937 in) 0.004 ~ 0.019 mm (0.0007 ~ 0.0008 in) <0.07 mm (0.0028 in)></p>
<p>Piston Ring: Sectional Sketch (B x T)/Type Top Ring 2nd Ring End Gap (installed): Top Ring 2nd Ring Side Clearance (installed): Top Ring 2nd Ring</p> 	<p>1.5 x 1.8 mm (0.059 x 0.071 in)/Keystone 1.5 x 1.8 mm (0.059 x 0.071 in)/Keystone</p> <p>0.15 ~ 0.35 mm (0.006 ~ 0.014 in) 0.15 ~ 0.35 mm (0.006 ~ 0.014 in)</p> <p>0.03 ~ 0.05 mm (0.0012 ~ 0.0020 in) 0.03 ~ 0.05 mm (0.0012 ~ 0.0020 in)</p>
<p>Crankshaft:</p>  <p>Crank Width "A" Run Out Limit "C" Connecting Rod Big End Side Clearance "D" Small End Free Play "F"</p>	<p>37.90 ~ 37.95 mm (1.492 ~ 1.494 in) 0.03 mm (0.0012 in)</p> <p>0.2 ~ 0.5 mm (0.008 ~ 0.020 in) 0.4 ~ 0.8 mm (0.015 ~ 0.031 in)</p>

MAINTENANCE SPECIFICATIONS



Model	CY50B
Automatic Centrifugal Clutch: Shoe Thickness <Wear Limit> Clutch Shoe Spring Free Length Clutch Spring Free Length <Limit> Clutch Housing Inside Diameter <Wear Limit> Clutch-In Revolution Clutch-Stall Revolution	2.5 mm (0.10 in) <2.0 mm (0.08 in)> 26.2 mm (1.03 in) 95.4 mm (3.76 in) <92.4 mm (3.64 in)> 105.0 mm (4.13 in) <105.4 mm (4.15 in)> 3100 ~ 3500 r/min 6050 ~ 6550 r/min
V-Belt: Width <Wear Limit>	16.6 mm (0.65 in) <15.2 mm (0.60 in)>
Transmission: Main Axle Runout Limit Drive Axle Runout Limit	0.08 mm (0.003 in) 0.08 mm (0.003 in)
Kick Starter: Type Kick Clip Tension	Ratchet type 150 ~ 250 g (5.3 ~ 8.8 oz)
Carburetor: I.D. Mark Main Jet (M.J.) Jet Needle-clip Position (J.N.) Main Air Jet (M.A.J.) Cutaway (C.A.) Pilot Jet (P.J.) Pilot Air Screw (A.S.) Valve Seat Size (V.S.) Starter Jet (P.J.) Float Height Engine Idling speed	3KJ10 #76 3R00 3/5 ø2.0 2.5 #42 1 and 5/8 turns out ø1.8 #48 15.0 ~ 17.0 mm (0.59 ~ 0.67 in) 1,800 r/min
Reed Valve: Valve Stopper Height Reed Valve Clearance	6.0 ~ 6.4 mm (0.24 ~ 0.25 in) Less than 0.2 mm (0.008 in)
Lubrication System: Autolube Pump Stroke	0.5 mm (0.020 in)

Tightening Torque							
Parts to be tightened	Part name	Thread size	Q' ty	Tightening torque			Remarks
				Nm	m·kg	ft·lb	
Spark Plug	—	M14 x 1.25	1	20	2.0	14	
Cylinder Head	Nut	M7 x 1.0	4	14	1.4	10	
Stud Bolt	—	M7 x 1.0	4	17	1.7	12	
Stator Assembly	Screw	M6 x 1.0	2	8	0.8	5.8	
C.D.I. Magneto	Nut	M10 x 1.25	1	38	3.8	27	
Air Shroud	Screw	M6 x 1.0	2	7	0.7	5.1	
Fan	Screw	M6 x 1.0	3	7	0.7	5.1	
Autolube Pump	Screw	M5 x 0.8	2	4	0.4	2.9	
Reed Valve (carburetor joint)	Bolt	M6 x 1.0	4	9	0.9	6.5	
Air Cleaner Case	Screw	M6 x 1.0	2	9	0.9	6.5	
Exhaust Pipe	Screw	M6 x 1.0	2	9	0.9	6.5	
Muffler	Bolt	M8 x 1.25	2	26	2.6	19	
Muffler Protector	Screw	M6 x 1.0	2	9	0.9	6.5	
Crankcase cover 1	Screw	M6 x 1.0	11	9	0.9	6.5	
Cover 3	Screw	M6 x 1.0	2	7	0.7	5.1	
Transmission Oil Drain Bolt	—	M8 x 1.25	1	18	1.8	13	
Kick Crank	Bolt	M6 x 1.0	1	9	0.9	6.5	
Clutch Housing	Nut	M10 x 1.0	1	40	4.0	29	
Clutch Carrier	Nut	M28 x 1.0	1	50	5.0	36	
Primary Sheeve	Nut	M10 x 1.25	1	33	3.3	24	
Idle Gear Plate	Screw	M6 x 1.0	2	8	0.8	5.8	
Starter Motor	Bolt	M6 x 1.0	2	13	1.3	9.4	

CHASSIS

Model	CY50B
Steering System: Steering Bearing Type No./Size of Steel Balls Upper Lower	Ball bearing 5/32 in 26 pcs. 5/32 in 26 pcs.
Front Suspension: Front Fork Travel Fork spring Free Length <Limit> Spring Rate Stroke Optional Spring	47.8 mm (1.68 in) 91.5 mm (3.60 in) <87 mm (3.42 in)> 5.64 N/mm (0.564/mm, 31.6 lb/in) Zero ~ 47.8 mm (Zero ~ 1.88 in) No.
Rear Suspension: Shock absorber Travel Spring Free Length Spring Fitting Length Spring Rate: (K1) (K2) (K3) Stroke: (K1) (K2) (K3) Optional Spring	45 mm (1.77 in) 176.5 mm (6.95 in) 166.5 mm (6.56 in) 25.0 N/mm (2.5 kg/mm, 140.0 lb/in) 37.0 N/mm (3.7 kg/mm, 207.2 lb/in) 53.0 N/mm (5.3 kg/mm, 296.8 lb/in) Zero ~ 20 mm (Zero ~ 0.79 in) 20 ~ 35 mm (0.79 ~ 1.38 in) 35 ~ 45 mm (1.38 ~ 1.77 in) No.
Wheel: Front Wheel Type Rear Wheel Type Front Rim Size/Material Rear Rim Size/Material Rim Runout Limit: Vertical Lateral	Panel wheel Panel wheel MT 2.15 x 10 / Steel MT 2.15 x 10 / Steel 2.0 mm (0.08 in) 2.0 mm (0.08 in)
Front Drum Brake: Type Drum Inside Diameter <Wear Limit> Lining Thickness <Wear Limit>	Leading, Trailing 95.0 mm (3.74 in) <96.0 mm (3.78 in)> 4.0 mm (0.16 in) <2.0 mm (0.08 in)>
Rear Drum Brake: Type Drum Inside Diameter <Wear Limit> Lining Thickness <Wear Limit>	Leading, Trailing 110.0 mm (4.33 in) <111.0 mm (4.37 in)> 4.0 mm (0.16 in) <2.0 mm (0.08 in)>

Tightening Torque							
Parts to be tightened	Part name	Thread size	Q' ty	Tightening torque			Remarks
				Nm	m-kg	ft-lb	
Frame and Engine Bracket	Nut	M10 x 1.25	2	46	4.6	33	
Engine Bracket and Engine	Bolt	M12 x 1.25	1	84	8.4	61	
Rear Suspension (upper)	Nut	M10 x 1.25	1	32	3.2	23	
(lower)	Bolt	M8 x 1.25	1	18	1.8	13	
Handlebar and Steering Column	Bolt	M10 x 1.25	1	60	6.0	43	
Ring nut (steering column)	—	M25 x 1.0	1	30	3.0	22	
Front Wheel Axle	Nut	M10 x 1.25	1	47	4.7	34	
Front Brake Cam Lever	Bolt	M5 x 0.8	1	4	0.4	2.9	
Rear Brake Cam Lever	Bolt	M6 x 1.0	1	8	0.8	5.8	
Rear Wheel Axle	Nut	M14 x 1.5	1	104	10.4	75.4	
Fuel Sender	Bolt	M5 x 0.8	4	3	0.3	2.2	
Carrier	Nut	M6 x 1.0	2	10	1.0	7.2	
Carrier	Bolt	M8 x 1.25	1	16	1.6	11	
Bridge Plate		M8 x 1.25	4	26	2.6	19	
Fuel cock	Bolt	M6 x 1.0	2	5	0.5	3.6	
Fuel tank (upper)	Nut	M6 x 1.0	2	7	0.7	5.1	
Fuel tank (lower)	Bolt	M6 x 1.0	2	7	0.7	5.1	
Seat lock	Bolt	M6 x 1.0	2	7	0.7	5.1	
Box (front)	Bolt	M6 x 1.0	2	8	0.8	5.8	
Plastic Part (M6)	—	M6 x 1.0	—	6	0.6	4.3	
(M5)	—	M5 x 1.0	—	1	0.1	0.7	



ELECTRICAL

Model	CY50B
Voltage:	12V
Ignition System: Ignition Timing (B.T.D.C.) Advancer Type	14° at 5,000 r/min Electrical
C.D.I.:	
Magneto Model/Manufacturer	3KJ/YAMAHA
Pickup Coil Resistance (color)	400 ~ 600Ω at 20°C (68°F) (White/Red – Black)
Source Coil Resistance (color)	640 ~ 960Ω at 20°C (68°F) (Black/Red – Black)
C.D.I. Unit-Model/Manufacturer	3KJ/YAMAHA
Ignition Coil:	
Model/Manufacturer	3KJ/YAMAHA
Primary Coil Resistance	0.56 ~ 0.84Ω at 20°C (68°F)
Secondary Coil Resistance	5.68 ~ 8.52kΩ at 20°C (68°F)
Spark plug cap:	
Resistance	4 ~ 6kΩ at 20°C (68°F)
Charging System/Type:	Flywheel magneto
C.D.I. Magneto:	
Model/Manufacturer	3KJ/YAMAHA
Charging Coil Resistance (color)	0.48 ~ 0.72Ω at 20°C (68°F) (White – Black)
Charging Current	0.4 A at 3000 r/min ~ 1.0A at 8000 r/min
Lighting Coil Resistance (color)	0.45 ~ 0.55 at 20°C (68°F) (Yellow/Red – Black)
Lighting Voltage	12V at 3000r/min ~ 15V at 8000 r/min
Voltage Regulator/Rectifier:	
Type	Semi conductor short circuit type
Model/Manufacturer	EHU-01TR27/MATSUSHITA or
No Load Regulated Voltage	SH580-12/SHINDENGEN
	13.5 – 14.5V
Capacity	5A
Withstand Voltage	240V

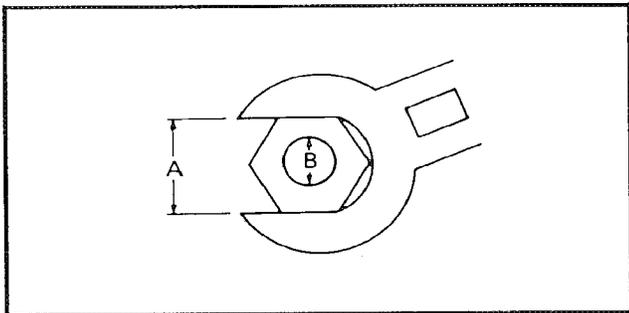


Model	CY50B	
Battery: Capacity Specific Gravity	12V, 4AH 1.32	
Starter Motor:		
Model	DA5AN	3KJ
Manufacturer	NIPPON DENSO	YAMAHA
Output	0.15 kW	0.14 kW
Armature Coil Resistance	0.08 ~ 0.10Ω at 20°C (68°F)	0.06 ~ 0.08Ω at 20°C (68°F)
Brush Length	4.5 mm (0.18 in)	3.9 mm (0.15 in)
<Wear Limit>	<2.5 mm (0.10 in)>	<0.9 mm (0.035 in)>
Brush Spring Pressure	250 ~ 450 gf (8.8 ~ 15.9 oz)	560 ~ 840 gf (19.8 ~ 29.7 oz)
Commutator Diameter	15.5 mm (0.61 in)	15.8 mm (0.62 in)
<Wear Limit>	<14.5 mm (0.57 in)>	<14.8 mm (0.58 in)>
Mica Undercut	0.9 ~ 1.2 mm (0.035 ~ 0.047 in)	1.15 mm (0.045 in)
Starter Relay:		
Model/Manufacturer	27V/TATEISHI	27V/MATSUSHITA
Amperage Rating	20A	26A
Coil Resistance	54 ~ 66Ω at 20°C (68°F)	72 ~ 88Ω at 20°C (68°F)
Horn:		
Type/Quantity	Plain type/1 pc	
Model/Manufacturer	GF-12/NIKKO	
Maximum Amperage	1.5A	
Flasher Relay:		
Type	Condenser type	
Model/Manufacturer	FZ222SD/NIPPON DENSO	
Self Cancelling Device	No	
Flasher Frequency	60 ~ 120 cycle/min	
Wattage	10W x 2 + 3.4W	
Oil Level Gauge:		
Model/Manufacturer	3KJ/NIPPON BINYLON, 53L/TAIHEIYOU ASTI	
Circuit Breaker:		
Type	Fuse	
Amperage for Individual Circuit x Quantity:		
Main	7A x 1	
Fuel Sender Unit:		
Model/Manufacturer	YA-750-01-NO-FU/NIPPON SEIKI	
Resistance (full)	4 ~ 10Ω at 20°C (68°F)	
Resistance (empty)	90 ~ 100Ω at 20°C (68°F)	

GENERAL TORQUE SPECIFICATIONS

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

A (Nut)	B (Bolt)	General torque specifications		
		Nm	m·kg	ft·lb
10 mm	6 mm	6	0.6	4.3
12 mm	8 mm	15	1.5	11
14 mm	10 mm	30	3.0	22
17 mm	12 mm	55	5.5	40
19 mm	14 mm	85	8.5	6.1
22 mm	16 mm	130	13.0	94

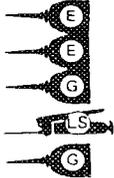


A: Distance across flats
B: Outside thread diameter

DEFINITION OF UNITS

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

LUBRICATION POINTS AND LUBRICANT TYPE
ENGINE

Lubrication Points (part name)	Lubricant Type
Oil seal lips (all)	
O-rings (all)	
Bearing retainer Crankshaft bearings Needle bearings (connecting rod) Main axle bearings Drive axle bearings Secondary sheave axle bearing	
Piston rings, piston pins and pistons	
Kick pinion gear	
Kick shaft	
Starter idle gear	
Starter clutch pin	
Oil pump driven gear and drive gear	
Secondary sliding sheave cam groove	BEL-RAY assembly lube®
Secondary fixed sheave in-side dia.	BEL-RAY assembly lube®
Crankcase mating surfaces	Yamaha bond No. 1215®

LUBRICATION POINTS AND LUBRICANT TYPE



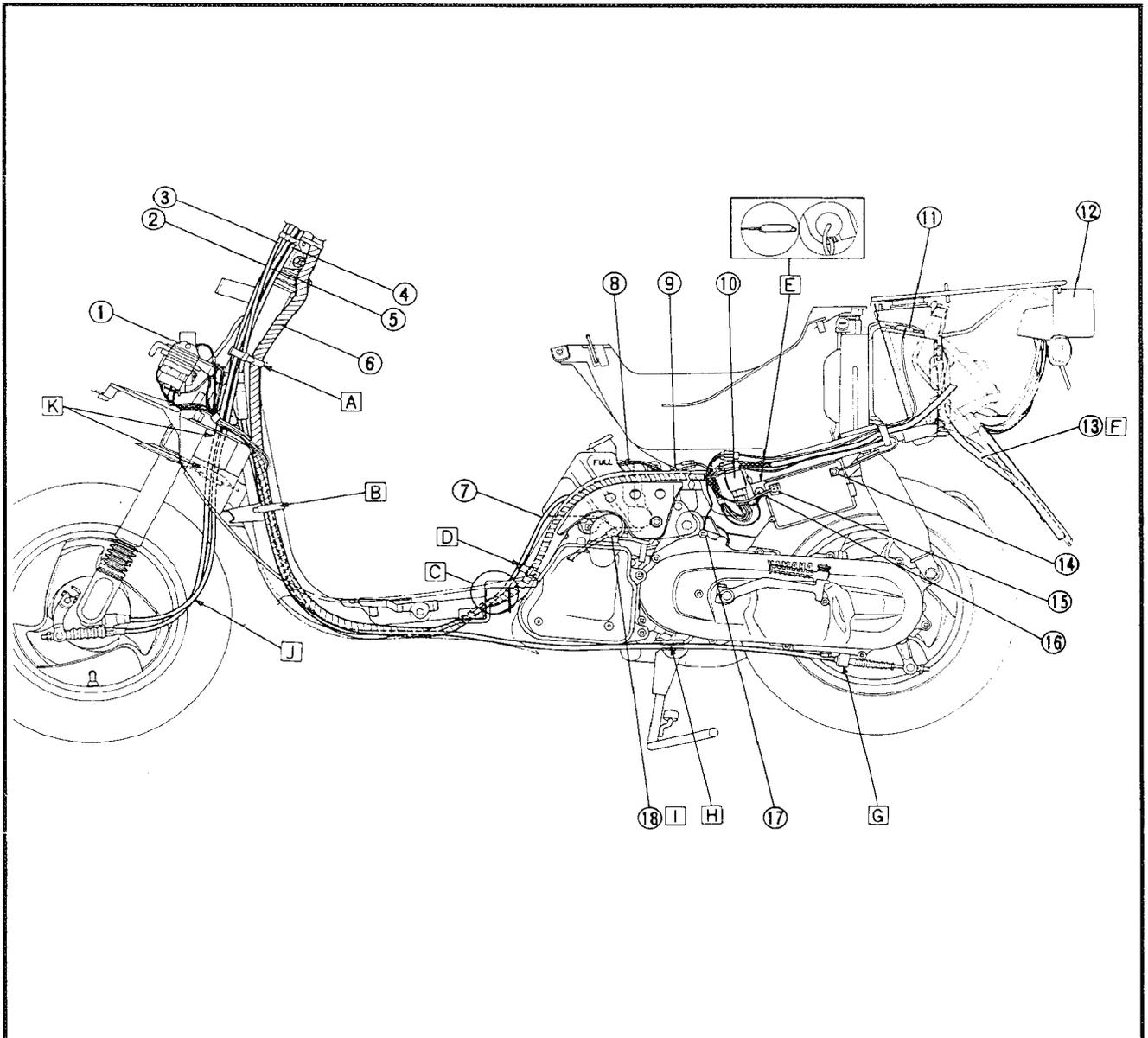
CHASSIS

Lubrication Points (part name)	Lubricant Type
Ball bearing (steering shaft)	LS
Throttle grip inner surface	LS
Lever pivots and cable end	LS
Oil seal lip (front wheel)	LS
Bearing (front wheel)	LS
Speedometer gear	LS
Center stand pivot	LS



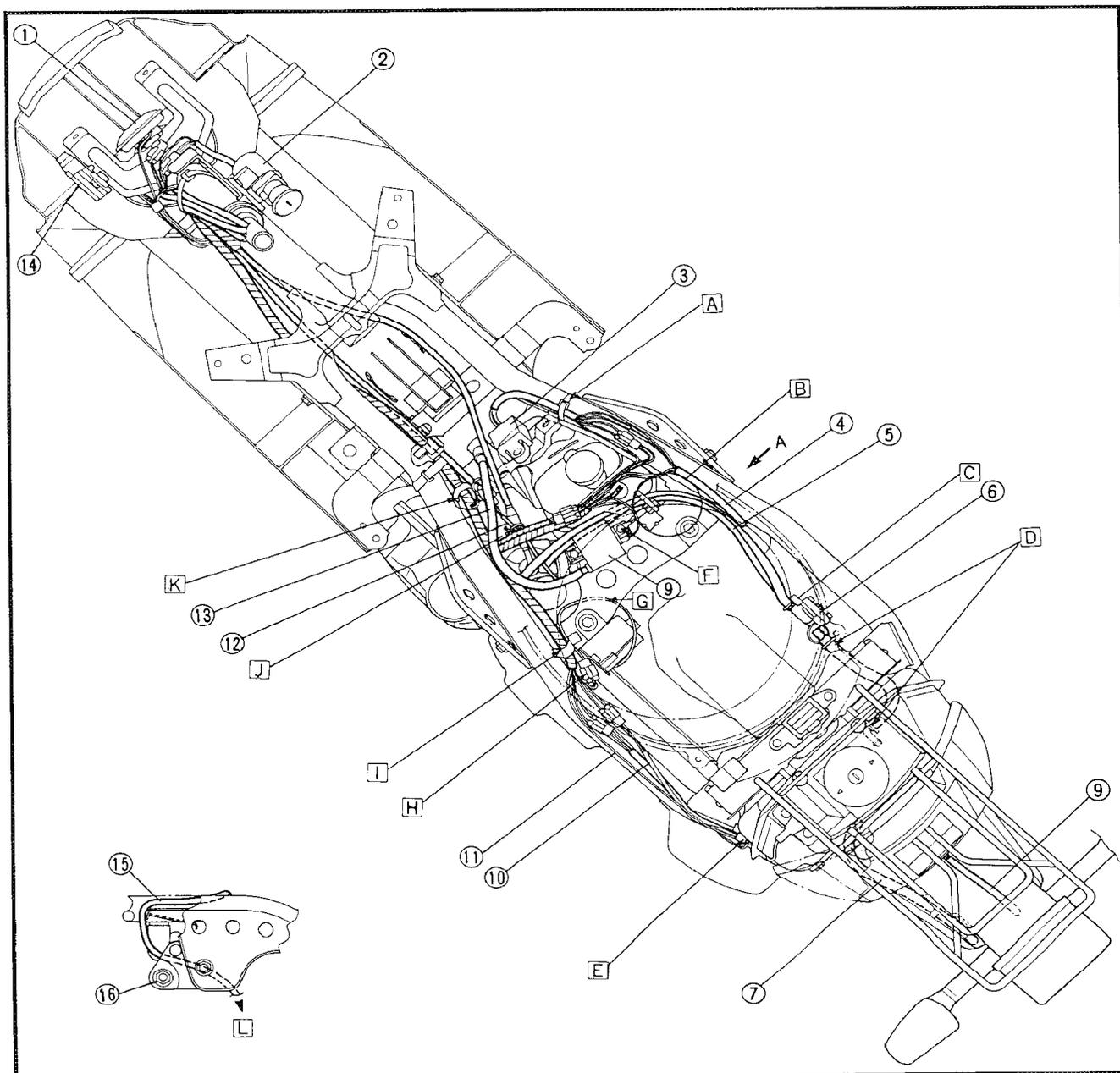
CABLE ROUTING

- ① Rectifier/regulator
- ② Throttle cable 1
- ③ Rear brake cable
- ④ Speedometer cable
- ⑤ Front brake cable
- ⑥ Wireharness
- ⑦ Throttle cable 2
- ⑧ Oil level gauge
- ⑨ Starter motor lead
- ⑩ Starter relay
- ⑪ Fuel sender
- ⑫ Taillight ass'y
- ⑬ Fuel over flow hose
- ⑭ Battery lead (-)
- ⑮ Battery lead (+)
- ⑯ Fuse
- ⑰ Ground terminal
- ⑱ Oil hose
- A Clamp the cable and wireharness.
- B Clamp the wireharness, throttle cable 2 and rear brake cable.
- C Pass the wireharness and throttle cable on the footrest bracket 2 .
- D Clamp the wireharness to the frame.
- E Mate the fuse box mating surface and lead. And then insert it in the groove of box.
- F Pass the fuel over flow hose through the taillight ass'y guide.
- G Insert the cable tube end in the holder and then install the boots to the cable tube end.
- H Clamp the rear brake cable.
- I Install the oil hose until stop it.
- J Do not twist the speedometer cable and front brake cable.
- K Pass the speedometer cable and front brake cable through the hole of inner fender 1 and 2.

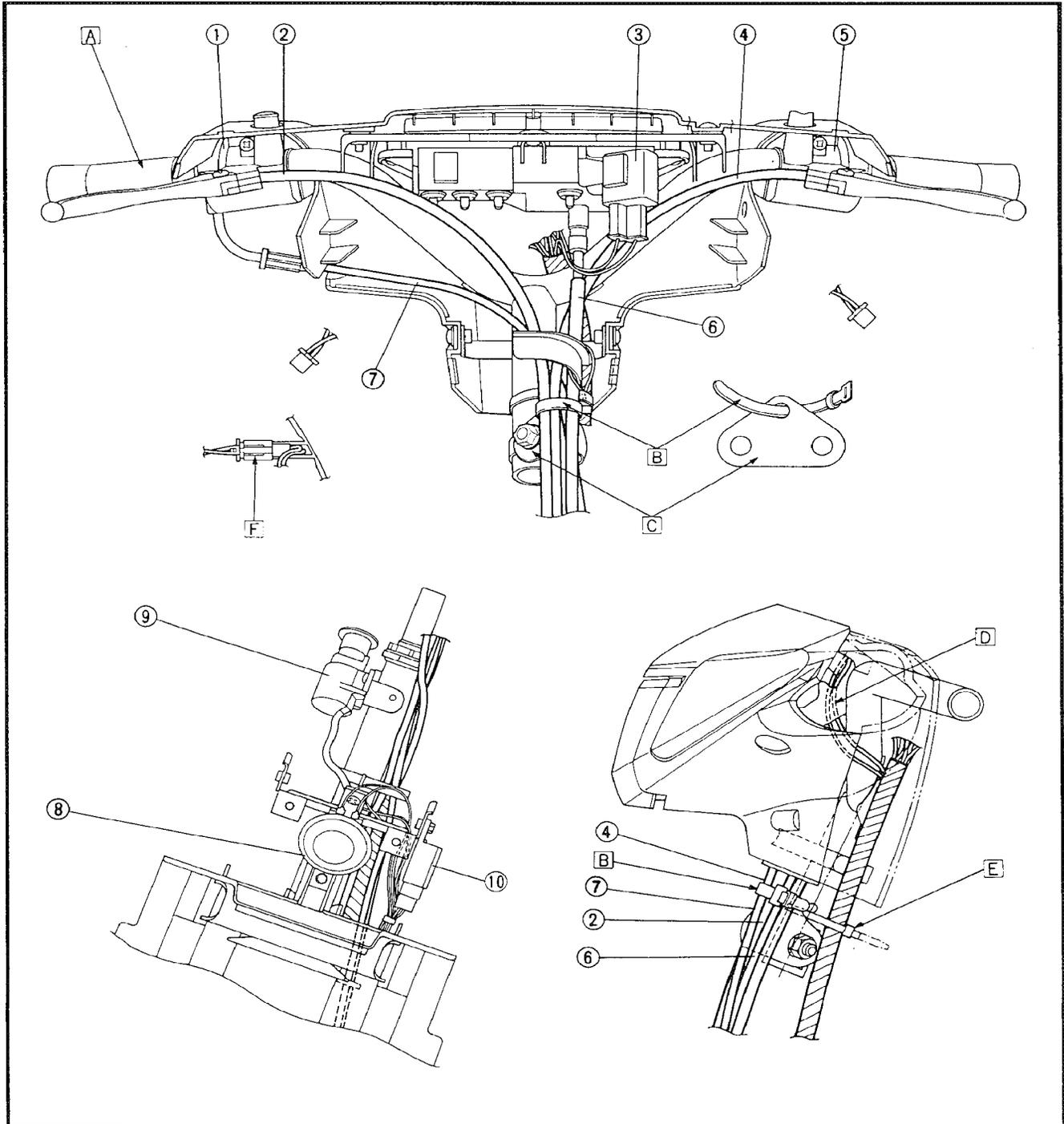


- ① Horn
- ② Main switch
- ③ C.D.I. unit
- ④ Fuel hose
- ⑤ Vacuum hose
- ⑥ Fuel cock
- ⑦ Fuel over flow hose
- ⑧ Ignition coil
- ⑨ Taillight lead
- ⑩ Fuel sender lead
- ⑪ Battery lead (-)
- ⑫ Auto choke unit lead
- ⑬ High tension lead
- ⑭ Rectifier/regulator
- ⑮ C.D.I. magneto lead
- ⑯ Engine mounting bolt

- A Clamp the C.D.I. unit lead.
- B Pass the fuel hose and vacuum hose through to the carburetor via right side of engine stay and between the oil tank and stay. Pass the vacuum hose over the fuel hose.
- C Clip the fuel hose.
- D Pass the fuel hose under the seat bracket.
- E Clamp the fuel sender, taillight and battery lead (-).
- F Tighten the ignition coil together with ground lead.
- G Pass the starter motor lead under the engine mounting bolt.
- H Pass the starter motor lead connector on the frame.
- I Clamp the wireharness and starter motor lead.
- J Pass the auto choke unit lead over the carburetor top and then connect /clamp.
- K Clamp the wireharness at white tape aria.
- L To engine.



- ① Lever holder (right)
 - ② Front brake cable
 - ③ Flashier relay
 - ④ Rear brake cable
 - ⑤ Lever holder (left)
 - ⑥ Speedometer cable
 - ⑦ Throttle cable 1
 - ⑧ Horn
 - ⑨ Main switch
 - ⑩ Rectifier/regulator
- A After installing, check the throttle operation.
 - B Clamp the front /rear brake cable, throttle cable and speedometer cable.
 - C Tighten the handlebar install bolt and then clamp it.
 - D Hook the lead to bracket of left handlebar.
 - E Clamp the wireharness only under the handlebar stem pin (6φ).
 - F Connect the flasherlight lead and then install it at flasherlight connector holder.



CHAPTER 3. PERIODIC INSPECTION AND ADJUSTMENT

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PERIODIC INSPECTION AND ADJUSTMENT

INTRODUCTION

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

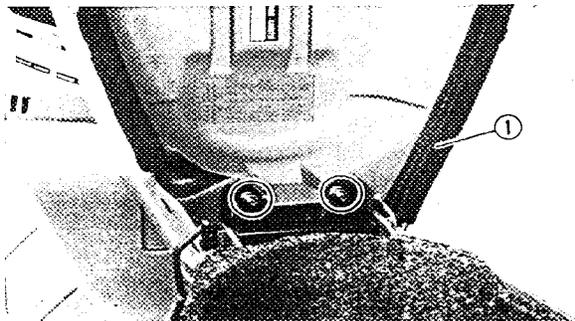
PERIODIC MAINTENANCE/LUBRICATION

Unit: km (miles)

ITEM	REMARKS	BREAK-IN 500 (300)	EVERY	
			3,000 (2,000) or 6 months	6,000 (4,000) or 12 months
Spark plug(s)	Check condition. Clean or replace if necessary.	○	○	○
Air filter	Clean. Replace if necessary.		○	○
Carburetor*	Check idle speed/starter operation. Adjust if necessary.	○		○
Fuel line*	Check fuel hose and vacuum pipe for cracks or damage. Replace if necessary.		○	○
Transmission oil*	Check oil leakage. Correct if necessary. Replace every 12,000 (8,000) or 24 months. (warm engine before draining.)	REPLACE	○	○
Autolube pump*	Check operation. Correct if necessary. Air bleeding.	○		○
Brake	Check operation. Adjust if necessary.		○	○
Wheels*	Check damage/runout. Repair if necessary.		○	○
Wheel bearings*	Check bearings assembly for looseness/damage. Replace if damaged.		○	○
Steering bearing*	Check bearings assembly for looseness. Correct if necessary. Moderately repack every 12,000 (8,000) or 24 months.**	○	○	○
Rear shock absorber*	Check operation/oil leakage. Replace if necessary.		○	○
V-belt*	Check damage and wear. Replace if necessary.			○
Fittings/Fasteners*	Check all chassis fittings and fasteners. Correct if necessary.	○	○	○
Centerstand*	Check operation. Repair if necessary.	○	○	○

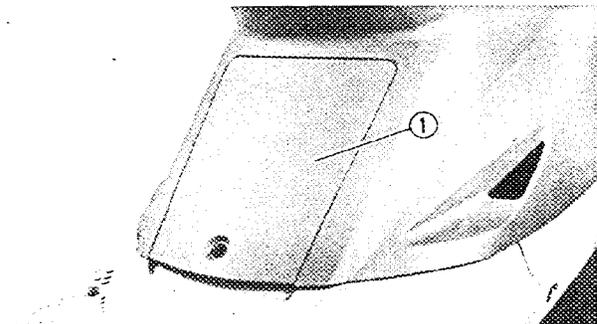
* : It is recommended that these items be serviced by a Yamaha dealer.

** : Medium weight wheel bearing grease.



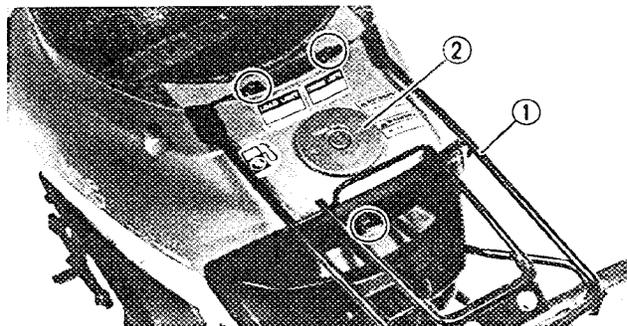
**TAIL COVER AND FOOTREST BOARD
REMOVAL**

1. Open the seat lock.
2. Remove:
 - Seat ①



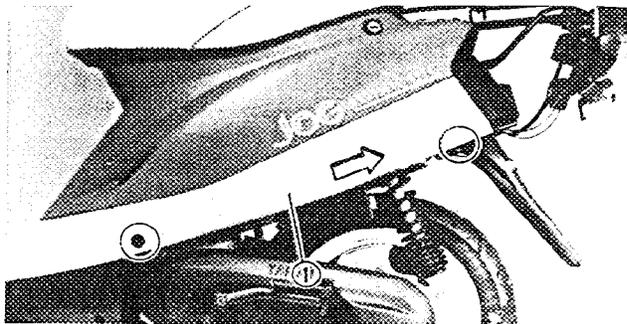
3. Remove:
 - Cover ①

4. Disconnect:
 - Rear flasher light leads
 - Tail light leads



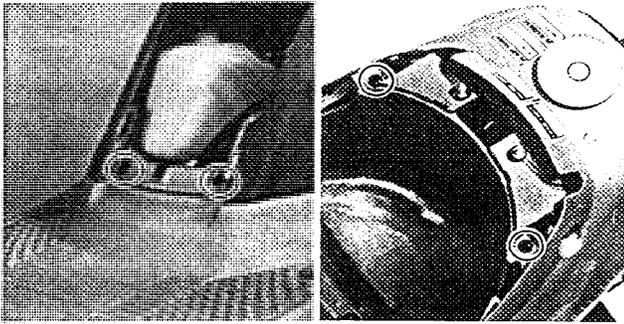
5. Remove:
 - Rear carrier ①
 - Fuel tank cap ②

NOTE: _____
 After removing the tail cover, immediately install the tank cap on the fuel tank.

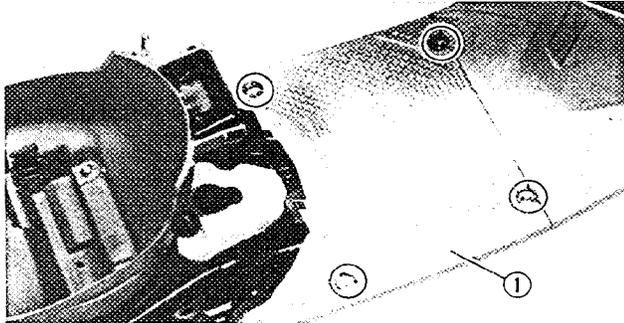


6. Remove:
 - Side covers ① (right and left)

NOTE: _____
 When removing the side cover, unhook it at the front and slide it backward.



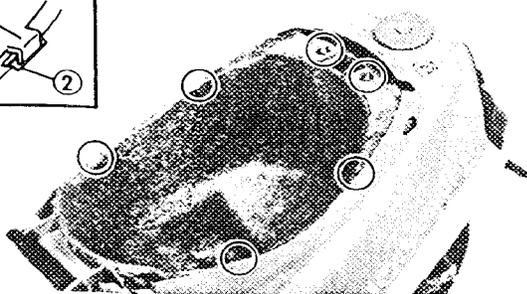
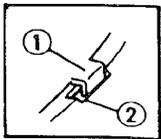
7. Remove:
- Tail cover



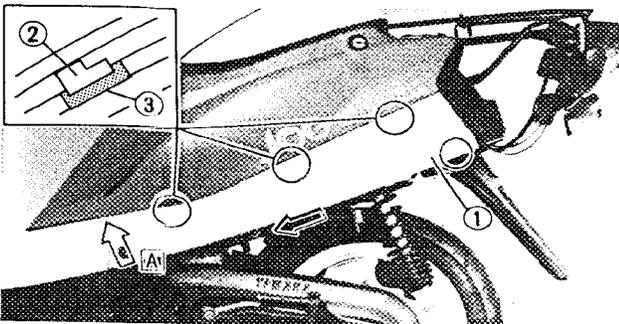
8. Remove:
- Footrest board ①

INSTALLATION

When installing the footrest board and tail cover, reverse the "REMOVAL" procedure. Note the following points.



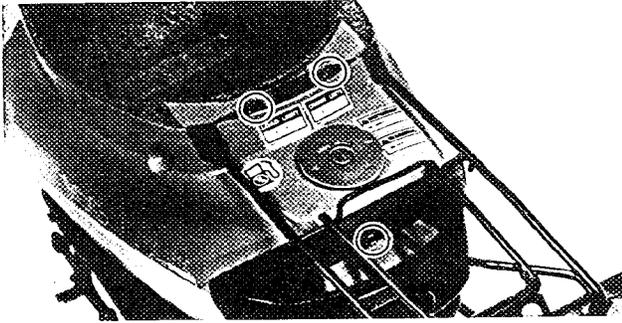
1. Insert:
- Inner damper stay ①
(in the box hole ②)



2. Install:
- Side covers ①

NOTE: _____

- Match the stay ② and hole ③, and then slide the side cover forward.
- Hook the front stay A .



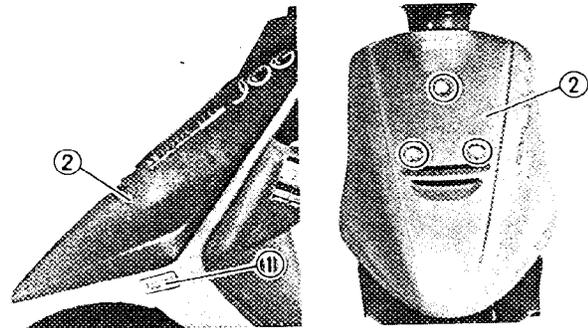
3. Install:
- Rear carrier

	Bolt:
	16 Nm (1.6 m · kg, 12 ft · lb)
	Nut:
	10 Nm (1.0 m · kg, 7.2 ft · lb)

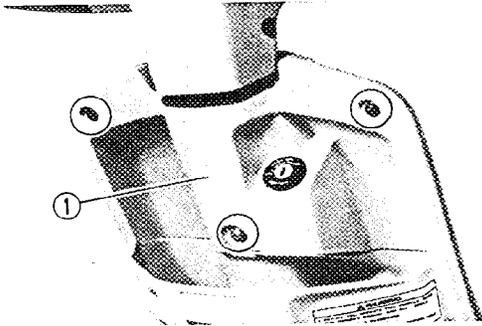
FRONT FENDER, AND FRONT PANEL REMOVAL

1. Remove:
- Cap ①
 - Front fender ②

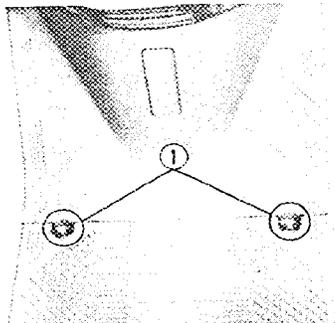
NOTE: _____
Before removing the fender, make sure that all hooks are free.



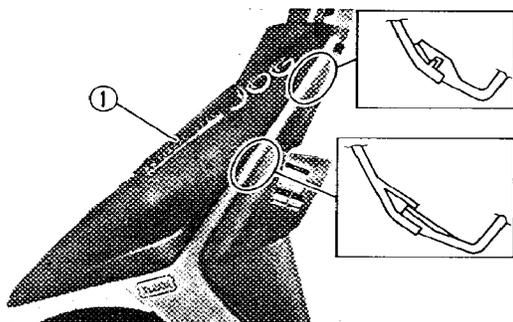
2. Remove:
- Main switch cap
Turn the cap counterclockwise.



3. Remove:
- Front panel ①



4. Remove:
- Footrest board bolts ③



INSTALLATION

Reverse the "REMOVAL" procedure.
Note the following points.

1. Install:
 - Front fender ①

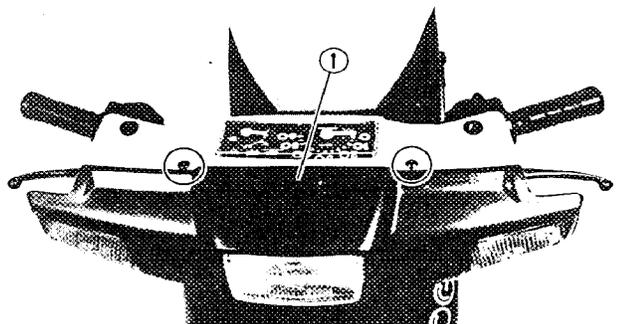
NOTE:

After installing the front fender, make sure that all hooks are securely fitted.

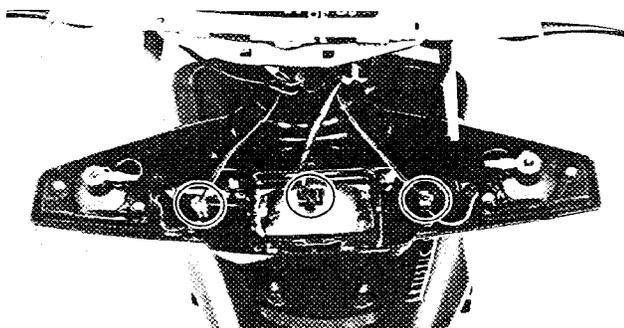
HANDLEBAR COVERS

REMOVAL

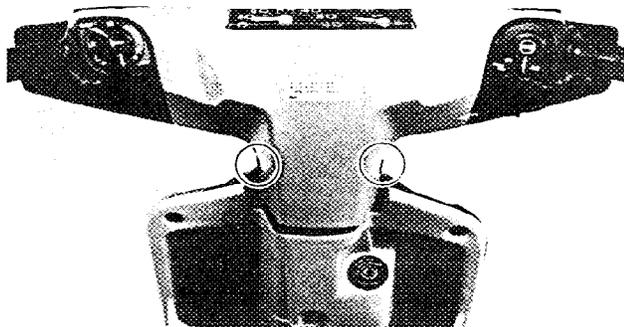
1. Remove:
 - Rear view mirror
 - Handlebar cover (front) ①



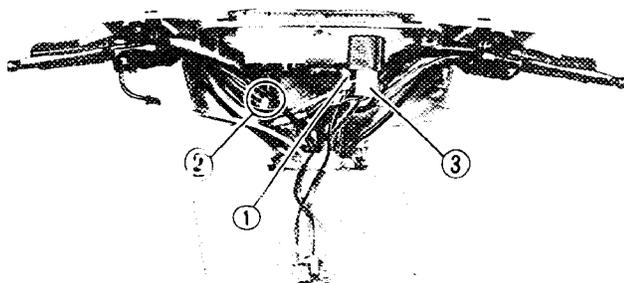
2. Disconnect:
 - Headlight leads
 - Flasher leads



3. Disconnect:
 - Speedometer cable
 - Meter leads
 - Flasher relay leads



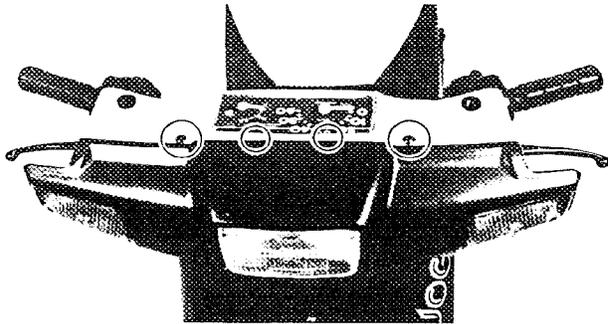
4. Remove:
 - Handle cover (rear)



INSTALLATION

Reverse the "REMOVAL" procedure.
Note the following points.

1. Connect:
 - Speedometer cable ①
 - Meter leads ②
 - Flasher relay leads ③



- 2. Install:
 - Handle cover (rear)
- 3. Connect:
 - Headlight leads
 - Flasher light leads

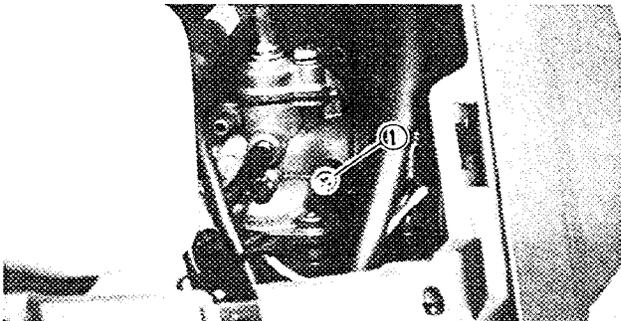
- 4. Install:
 - Handle cover (front)

NOTE:

- On the left side, install the flasher light having a chocolate color lead. Next, install the other flasher light with a dark green color lead on the right side.
- The leads of identical colors should be connected.
- After installing the handlebar cover, make sure that all hooks are securely fitted.

**ENGINE
ENGINE IDLE SPEED ADJUSTMENT**

- 1. Remove:
 - Cover



- 2. Tighten:
 - Pilot air screw ①
Turn the pilot air screw in until lightly seated.
- 3. Loosen:
 - Pilot air screw
Back it out from its lightly seated position.

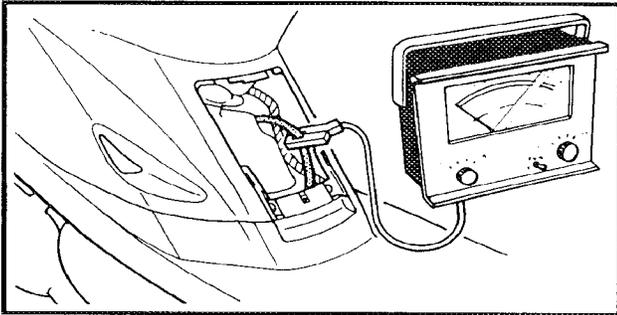
**Pilot Air Screw Turns Out:
1-5/8**

THROTTLE CABLE FREE PLAY ADJUSTMENT

**INSP
ADJ**



B-1



4. Start the engine and let it warm up.

⚠ WARNING

Before starting the engine, be sure to use the centerstand for safety.

5. Attach:

- Inductive tachometer
To the spark plug lead



**Inductive Tachometer:
YU-08036-A**

6. Check:

- Engine idle speed
Out of specification → Adjust.



**Engine Idle Speed:
1,800 r/min**

7. Adjust:

- Engine idle speed

Adjustment steps:

- Turn the throttle, stop screw ① in or out until specified idle speed is obtained.

Turn in	Idle speed becomes higher.
Turn out	Idle speed becomes lower.

THROTTLE CABLE FREE PLAY ADJUSTMENT

1. Check:

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



**Free play:
1.5 ~ 3.5 mm (0.06 ~ 0.14 in)**

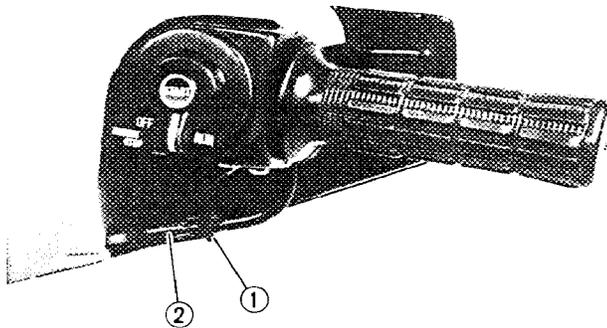
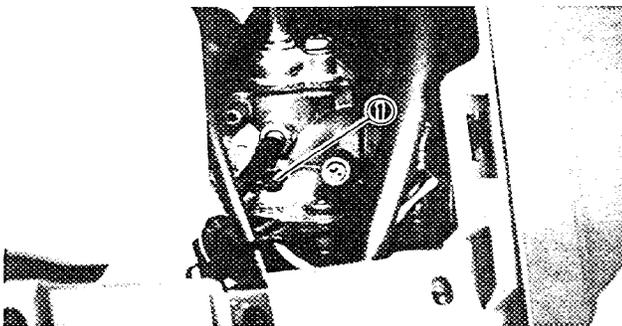
Throttle cable free play adjustment steps:

NOTE:

Before adjusting the throttle cable free play, the engine idle speed should be adjusted.

First step:

- Loosen the locknut ① on the throttle cable.
- Turn the adjuster ② in or out until the specified free play is obtained.



Turning in → Free play is increased.
Turning out → Free play is decreased.

- Tighten the locknuts.

NOTE: _____
If the free play cannot be adjusted here, adjust it at the carburetor side of the cable. (second step)

Second step:

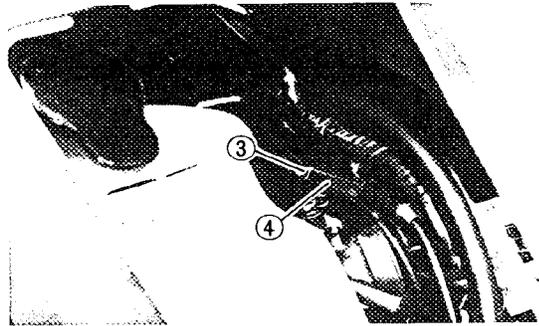
- Remove the cover.
- Loosen the locknut ③ .
- Turn the adjuster ④ in or out until the specified free play is obtained.

Turning in → Free play is increased.
Turning out → Free play is decreased.

- Tighten the locknut.
- Install the cover

⚠ WARNING

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



AUTOLUBE PUMP AIR BLEEDING

NOTE: _____

The Autolube pump and delivery lines must be bled on the following occasions:

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

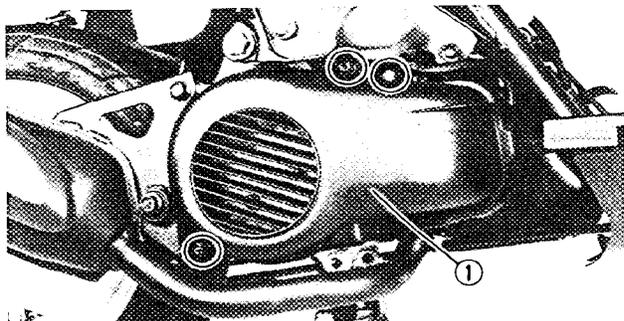
1. Remove:

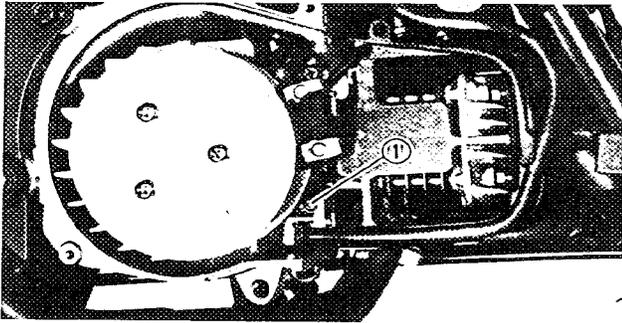
- Cover
- Side cover (left and right)
- Footrest board

Refer to "TAIL COVER AND FOOTREST BOARD" section.

2. Remove:

- Fan cover ①





3. Air bleed:

Air bleeding steps:

- Remove the bleed screw ① .
- Keep the oil running out until air bubbles disappear.
- When air bubbles are expelled completely, tighten the bleed screw.

NOTE: _____

Check the bleed screw gasket, and if damaged, replace with a new one.

- Install the bleed screw.

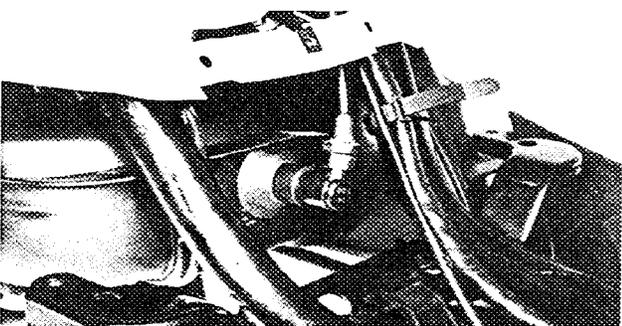
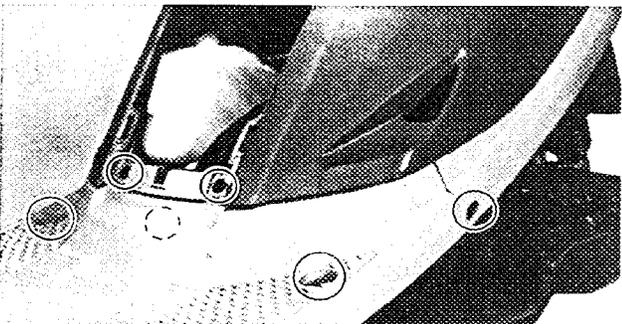
NOTE: _____

Wipe off any oil on the crankcase.

4. Install:

- Fan cover
- Footrest board
- Side cover (left and right)
- Cover

Refer to "TAIL COVER AND FOOTREST BOARD" section.



SPARK PLUG INSPECTION

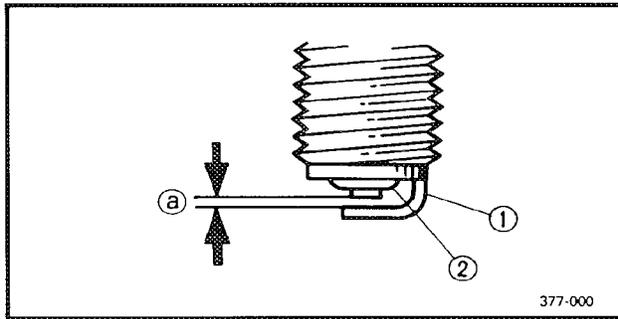
1. Remove:

- Cover
- Side cover (left and right)
- Footrest board
- Spark plug

2. Inspect:

- Spark plug type
Incorrect → Replace.

Standard spark plug:
BPR 7HS (N.G.K.)
W22FPR-U (N.D.)



3. Inspect:

- Electrode ①
Wear/Damage → Replace.
- Insulator ②
Abnormal color → Replace.
Normal color is a medium-to-light tan color.

4. Clean the spear plug with a spark plug cleaner or wire brush.

5. Measure:

- Plug gap (a)
Use a Wire Gauge or Feeler Gauge.
Out of specification → Regap.



Spark plug gap:
0,6 ~ 0.7 mm (0.024~ 0.028 in)

6. Tighten:

- Spark plug(s)



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

NOTE:

- Before installing a spark plug, clean the gasket surface and plug surface.
- If a torque wrench is not available when you are installing a spark plug, a good estimate of the correct torque is 1/4 to 1/2 turns part finger tight. Have the spark plug torqued to the correct valve as soon as possible with a torque wrench.

7. Install:

- Footrest board
- Side cover (left and right)
- Cover

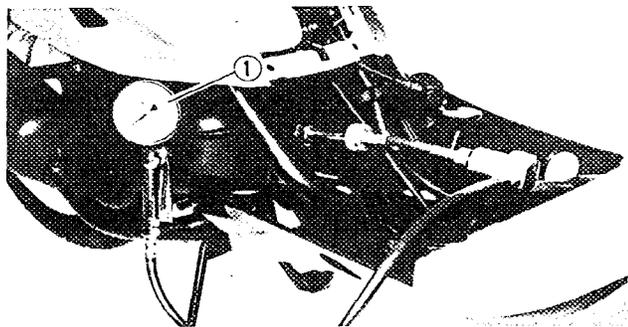
COMPRESSION PRESSURE MEASUREMENT**NOTE:**

Insufficient compression pressure will result in performance loss.

1. Warm up the engine.

2. Remove:

- Cover
- Side cover (left and right)
- Footrest board
- Spark plug



3. Measure:
- Compression pressure

Measurement steps:

- Install the compression gauge ① using an adapter.
- Crank over the engine with the electric starter (be sure the battery is fully charged) with the throttle wide open until the compression reading on the gauge stabilizes.
- Check readings with specified levels (see chart)

	Compression gauge: YU-33223
---	--------------------------------

Compression pressure (at sea level): Standard: 800 kPa (8.0 kg/cm ² , 114 psi) Minimum: 600 kPa (6.0 kg/cm ² , 85 psi)
--

⚠ WARNING

When cranking the engine, ground spark plug lead to prevent sparking.

Compression test steps (below minimum levels):

- Squirt a few drops of oil into cylinder.
- Measure compression again.

Reading	Diagnosis
Higher than without oil	• Worn cylinder, piston and piston rings
Same as without oil	• Defective piston, ring (s), valve (s) and cylinder head gasket

Compression test steps (above standard levels):

- Check cylinder head or piston crown for carbon deposits.
- Remove the compression gauge with an adapter.

4. Install:

- Spark plug

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

Refer to the "SPARK PLUG INSPECTION" section.

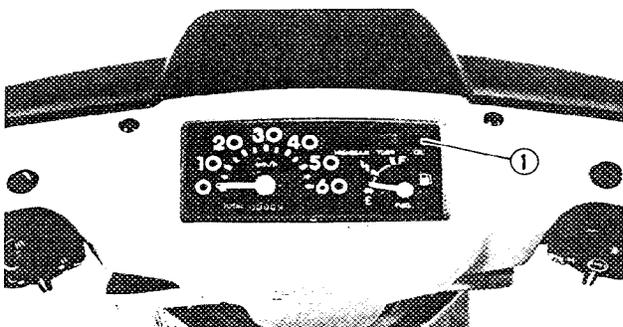
- Footrest board
- Side cover (left and right)
- Cover

ENGINE OIL LEVEL INSPECTION

1. Place the scooter on the level place.

NOTE: _____

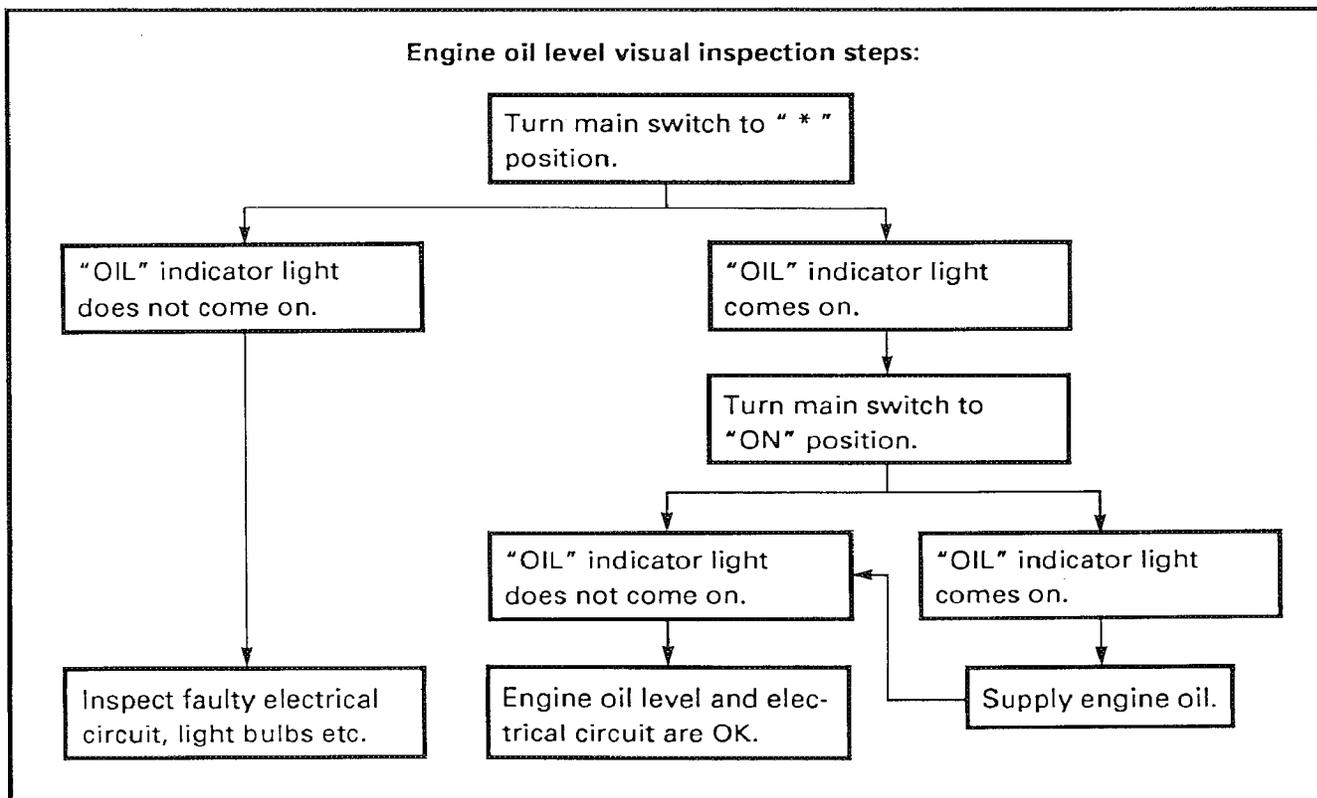
Be sure the scooter is positioned straight up and on both wheels when inspecting the oil level.



2. Inspect:

- Engine oil level
- Oil level low → Add sufficient oil by the following inspection steps.

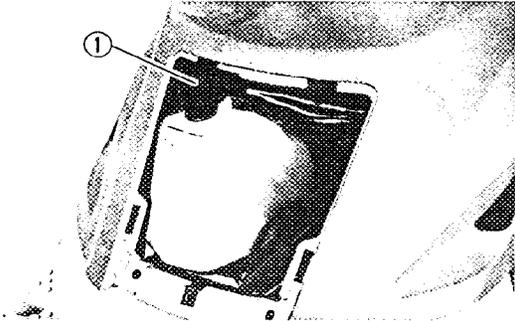
① "OIL" indicator light





Recommended Oil:
Yamalube 2 or equivalent air cooled
2 stroke engine oil.

Total:
0.8 L (0.7 Imp qt, 0.84 US qt)



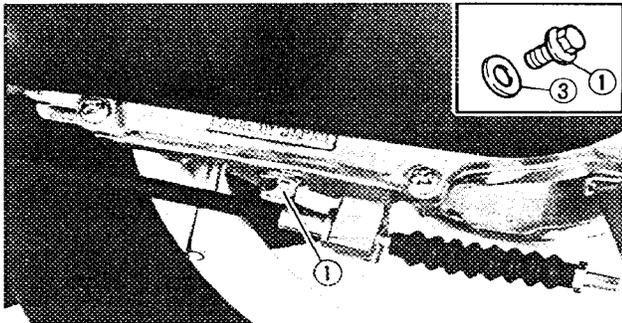
NOTE: _____
Install the oil tank filler cap ① and push it fully into the filler.

CAUTION: _____

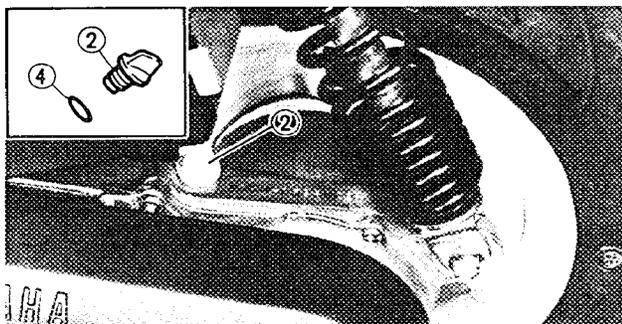
Always use the same type of engine oil; mixing oils may result in a harmful chemical reaction and lead to poor performance.

TRANSMISSION OIL REPLACEMENT

1. Warm up the engine at idle speed, then stop it.
2. Place the oil pan under the drain hole.



3. Remove:
 - Drain bolt ①
Drain the transmission oil.
 - Oil filler plug ②



4. Inspect:
 - Gasket ③ (drain bolt)
 - O-ring ④ (oil filler plug)
 Damage → Replace.

5. Install:
- Gasket
 - Drain bolt

	Drain Bolt: 18 Nm (1.8 m · kg, 13 ft · lb)
---	--

6. Fill:
- Transmission case

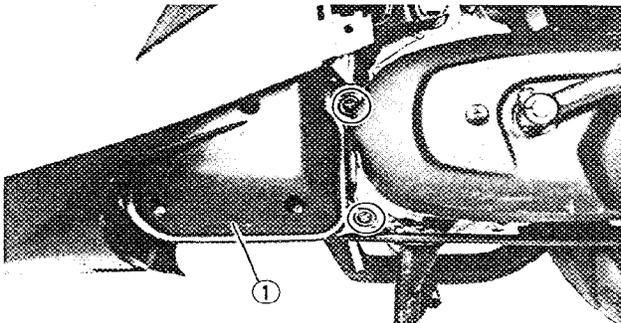
	Transmission Oil: SAE 10W30 Type SE Motor Oil or GL gear oil
	Capacity: 0.1 L (0.09 Imp qt, 0.11 US qt)

NOTE: _____
Wipe off any oil split on the crankcase, tire or wheel.

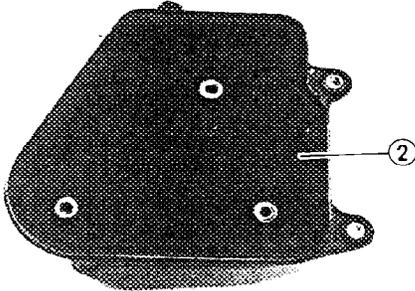
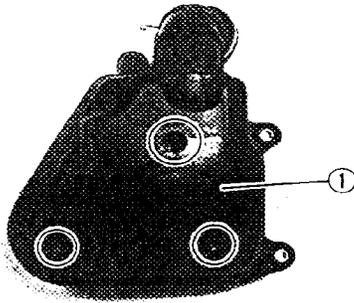
7. Install:
- Oil filler plug

AIR CLEANER ELEMENT CLEANING

1. Remove:
- Cover
 - Side cover (left)
Refer to "TAIL COVER AND FOOTREST BOARD" section.



2. Remove:
- Air cleaner case Assembly ①

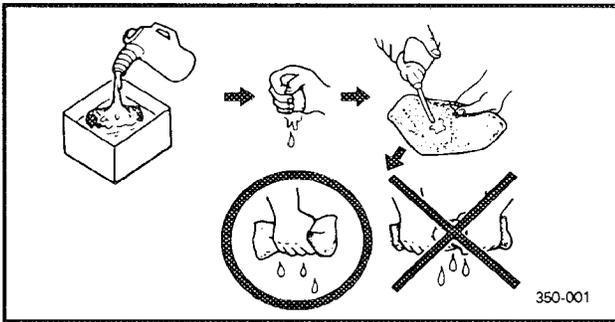


3. Remove:
- Air cleaner case ①
 - Air cleaner element ②

CAUTION:

Never operate the engine with the air cleaner element removed. This will allow unfiltered air to enter, causing rapid wear and possible engine damage. Additionally, operation without the cleaner element will affect carburetor jetting with subsequent poor performance and possible engine overheating.

Be careful not to have rags or the like blocking the intake area of the air cleaner.



4. Inspect:
- Element
Damage → Replace.
5. Clean:
- Air cleaner element

Air cleaner element cleaning steps:

- Wash the element gently, but thoroughly in solvent.

⚠ WARNING

Never use low flash point solvents such as gasoline to clean the element. Such solvent may lead to a fire or explosion.

- Squeeze the excess solvent out of the element and let dry.

CAUTION:

Do not twist the element when squeezing the element.

- Apply the Foam-air-filter oil or Yamalube 2 or equivalent air cooled 2 stroke engine oil.
- Squeeze out the excess oil.

NOTE:

The element should be wet but not dripping.



6. Install:

- Air cleaner element
- Air cleaner case cover
- Air cleaner case assembly
- cover
- Side cover (left)

Refer to "TAIL COVER AND FOOTREST BOARD" section.

FUEL COCK CLEANING

1. Remove:

- Side cover (right)

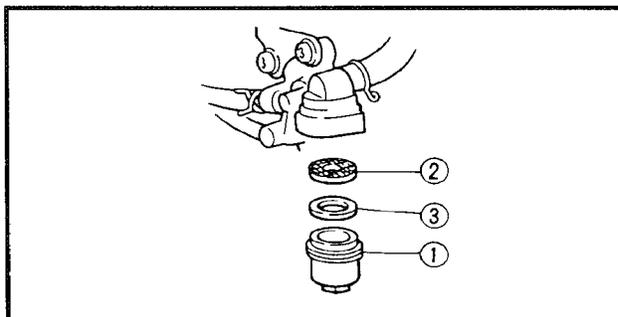
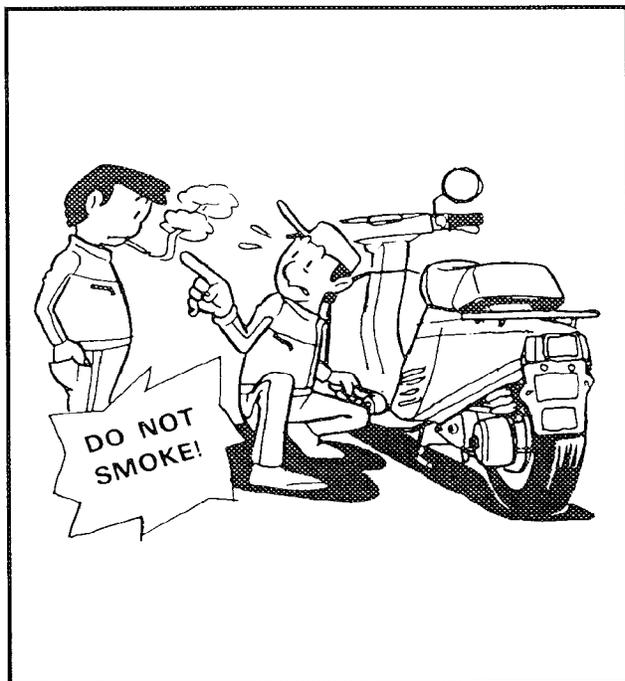
Refer to "TAIL COVER AND FOOTREST BOARD" section.

2. Drain:

- Fuel

⚠ WARNING**FUEL IS HIGHLY FLAMMABLE:**

- Always turn off the engine when draining.
- Take care not to spill any fuel on the engine or exhaust pipe/muffler when draining.
- Never drain fuel while smoking or in the vicinity of an open flame.



3. Remove:

- Cap ①
- Filter ②
- O-ring ③

4. Clean:

- Filter
- Cap

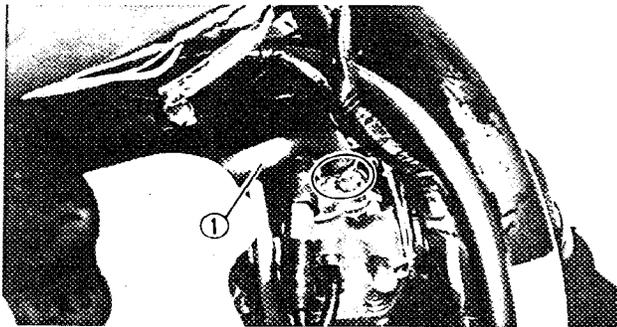
Wash the filter and cap gently using solvent.



5. Inspect:
 - Filter
 - O-ring
 Damage → Replace.
6. Install:
 - O-ring
 - Filter
 - Cap
 - Side cover
 Refer to "TAIL COVER AND FOOTREST BOARD" section.

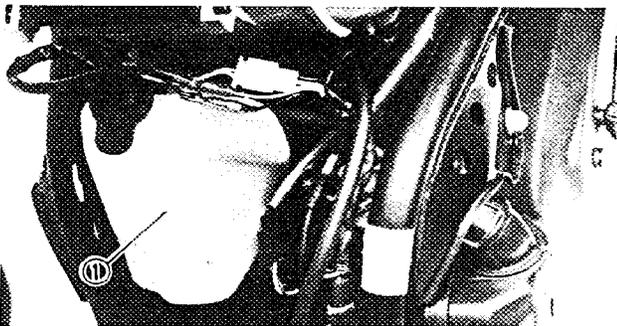
FUEL LINE INSPECTION

1. Remove:
 - Cover
 - Side cover (right)
 Refer to "TAIL COVER AND FOOTREST BOARD" section.



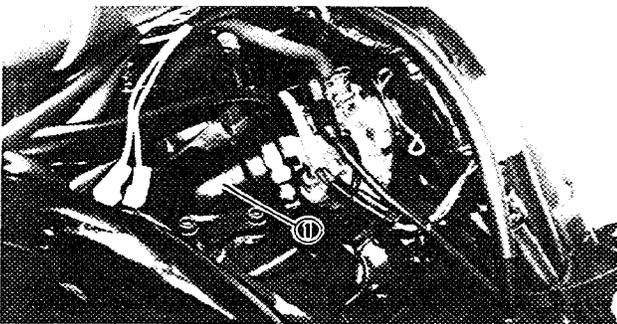
2. Inspect:
 - Fuel pipe ①
 Cracks/Damage → Replace.

3. Install:
 - Cover
 - Side cover (right)
 Refer to "TAIL COVER AND FOOTREST BOARD" section.



CARBURETOR JOINT INSPECTION

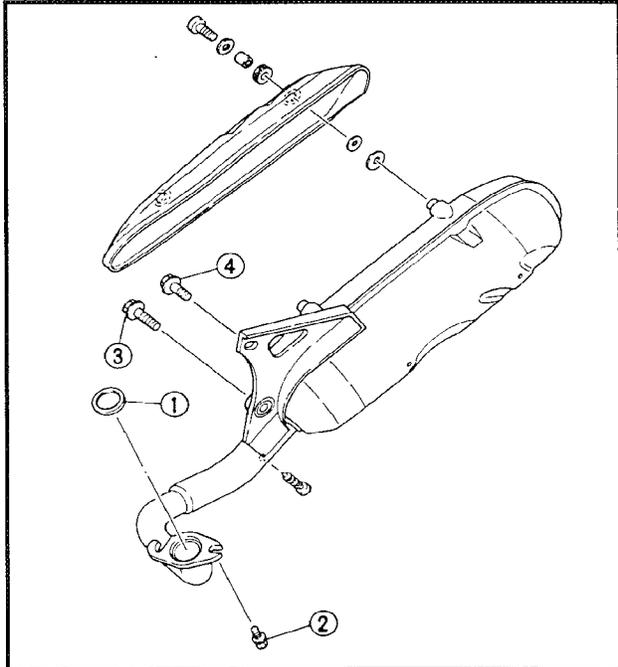
1. Remove:
 - Seat/Rear carrier
 - Tail cover/Side cover (left and right)
 - Footrest board
 Refer to the "TAIL COVER AND FOOTREST BOARD" section.
 - Oil tank ①
2. Disconnect
 - Oil level gauge lead
3. Inspect:
 - Carburetor joints ①
 Cracks/Damage → Replace.
 Refer to the "CARBURETOR" and "REED VALVE - REMOVAL" section in the CHAPTER 5.



4. Install:

- Oil tank
- Footrest board
- Tail cover/Side cover (left and right)
- Seat/Carrier

Refer to the "TAIL COVER AND FOOTREST BOARD" section.



EXHAUST SYSTEM INSPECTION

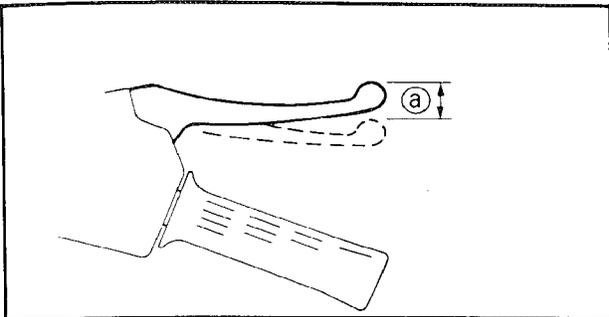
1. Inspect:

- Muffler assembly
Cracks/Damage → Replace.
- Gaskets ①
Exhaust gas leaks → Replace.

Replacement steps:

- Remove the muffler assembly.
- Install a new muffler assembly.

	Bolt (exhaust pipe) ② :
	9 Nm (0.9 m • kg, 6.5 ft • lb)
	Bolt (muffler) ③ : ④
	26 Nm (2,6 m • kg, 19 ft • lb)



CHASSIS

FRONT BRAKE LEVER FREE PLAY CHECK

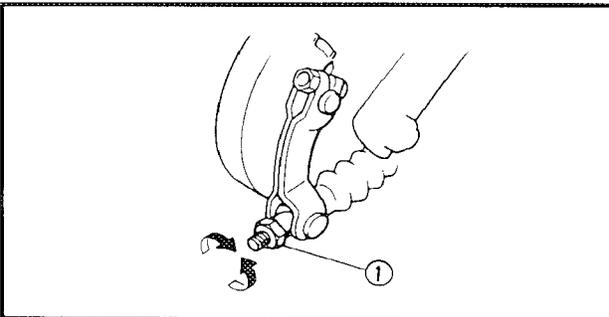
1. Check:

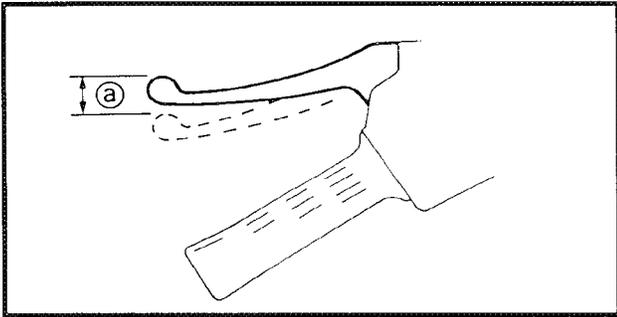
- Front brake lever free play
Out of specification → Adjust.

	10 ~ 20 mm (0.4 ~ 0.8 in)
---	---------------------------

Front brake lever free play adjustment steps:

- Turn the adjuster ① in or out until the correct free play is obtained.

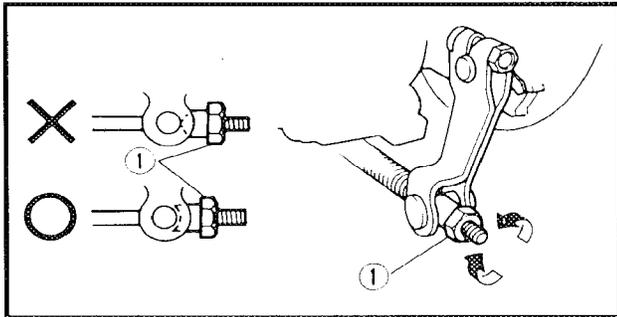
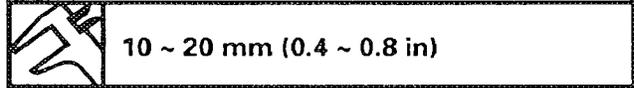




REAR BRAKE LEVER FREE PLAY CHECK

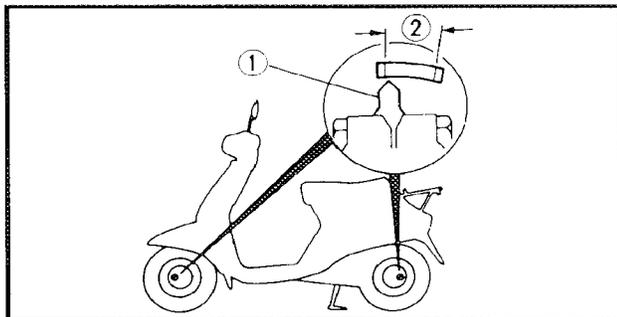
1. Check:

- Rear brake lever free play ①
- Out of specification → Adjust.



Rear brake lever free play adjustment steps;

- Turn the adjuster ① in or out until the correct free play is obtained.



BRAKE SHOE INSPECTION

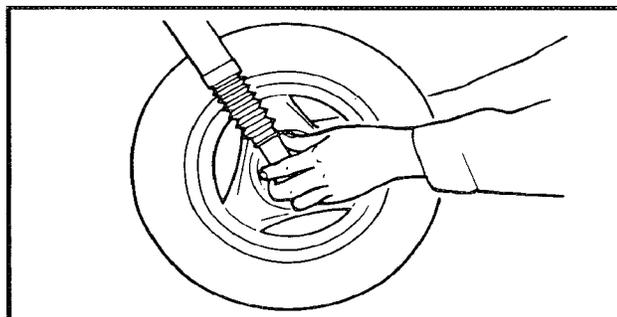
1. Activate the brake lever.

2. Inspect:

- Wear indicator ①
- Indicator at wear limit line ② → Replace brake shoes.

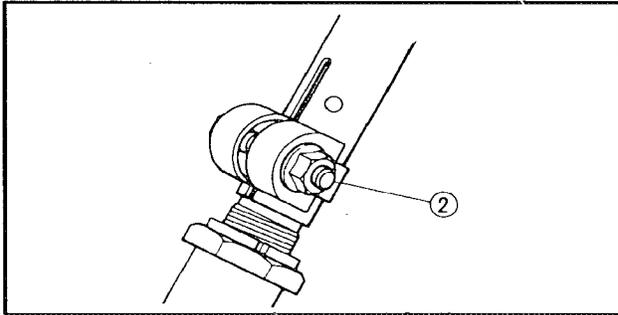
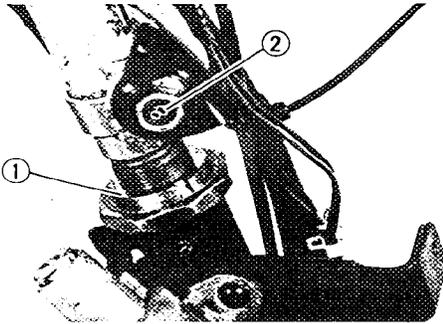
STEERING ADJUSTMENT

1. Place the scooter on its centerstand, then elevate the front wheel.



2. Check:

- Steering assembly bearings
- Grasp the bottom of the forks and gently rock the fork assembly back and forth.
- Looseness → Adjust.



- *****
- Steering head adjustment step;**
- Remove the front fender and front panel. Refer to "FRONT FENDER, AND FRONT PANEL" section.
 - Tighten the ring nut ① to specification using the Ring Nut Wrench (YU-33975).

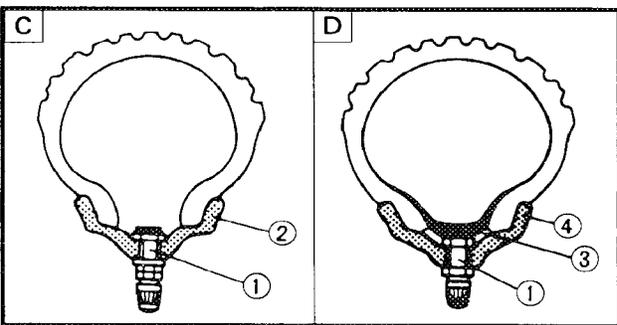
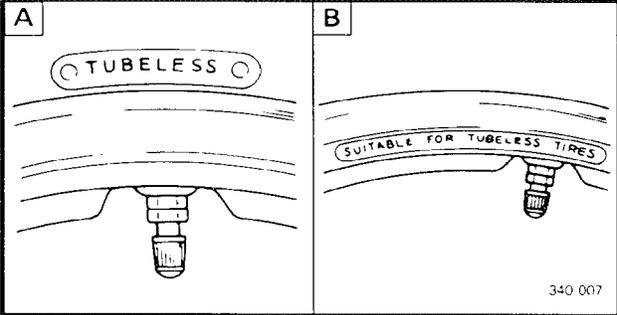
 **30 Nm (3.0 m • kg, 22 ft • lb)**

NOTE: _____
Set the torque wrench to the ring nut wrench so that they form a right angle.

- Move the handlebar up and down, and/or back and forth. If handlebar play is excess, tighten the bolt ② to specification.

 **60 Nm (6.0 m • kg, 43 ft • lb)**

- Install the front panel and front fender.
- *****



TIRE INSPECTION

⚠ WARNING _____

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

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

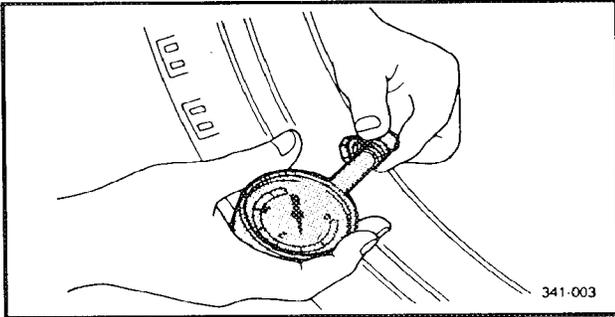
- Be sure to install the correct tube when using tube type tires.

- A** Tire
- B** Wheel
- C** Tubeless tire
- D** Tube typ tire
- ① Air valve
- ② Wheel (tubeless type)
- ③ Tube
- ④ Wheel (tube type)

Front and Rear:

Manufacture	Size	Type
INOUE	80/90-10,34J	MB38 *
CHENGSHIN	80/90-10,34J	C-922 *

(*Tubules tire)



⚠ WARNING

- After extensive tests, the tires mentioned have been approved by Yamaha motor Co., Ltd. for this model. NO guarantee for handling characteristics can be given if tire combinations other than what is approved are used on this scooter.

The front and rear tires should be of the same manufacture and design.

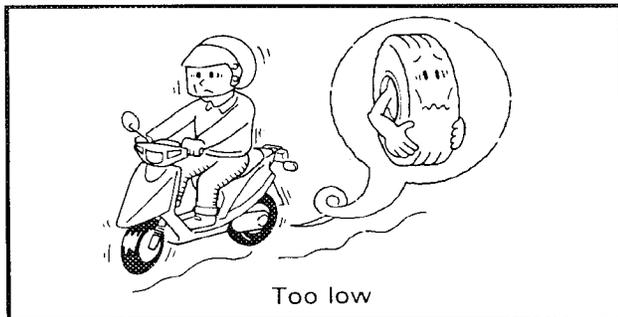
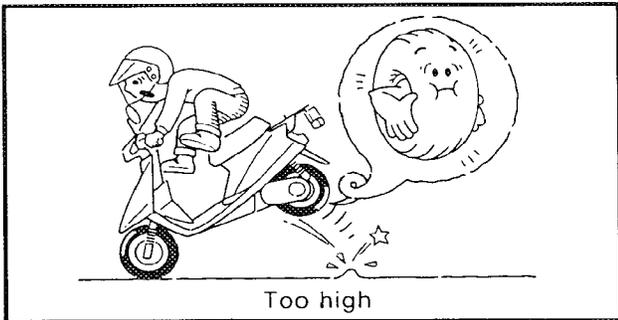
1. Measure:

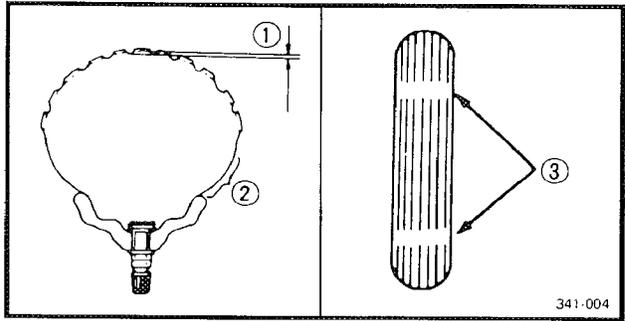
- Air pressure
Out of specification → Adjust.

	Cold tire pressure
Front	125 kPa (1.25 kg/cm ² , 18 psi)
Rear	200 kPa (2.00 kg/cm ² , 29 psi)

⚠ WARNING

1. Proper loading of your scooter is important for the handling, braking, and other performance and safety characteristics of your scooter. NEVER OVERLOAD YOUR SCOOTER. Make sure the total weight of the cargo, rider, and accessories (fairing, saddlebags, etc. if approved for this model) does not exceed the maximum load of the scooter. Operation of an overloaded scooter could cause tire damage, an accident, or even injury.
2. Improper tire pressures greatly affect tire life and handling. Check tire pressures prior to each trip and adjust properly if necessary. If tire pressures are too high, shocks from the road will not be damped and will be carried to the frame and handlebars, thus adversely affecting riding comfort. In addition, scooter stability will be poor when making a turn. If tire pressures are too low, tires will be deformed greatly, thus shortening tire life. When braking the wheels, tires could slip over wheel rims and tire tubes could be broken. When turning the corner or the curve, the scooter could easily turn over.





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

 Minimum tire tread depth
(front and rear):
0.8 mm (0.03 in)

- ① Tread depth
- ② Side wall
- ③ Wear indicator

WHEEL INSPECTION

1. Inspect:
- Wheels
- Damage/Bends → Replace.

⚠ WARNING

Never attempt even small repairs to the wheel.

CABLE INSPECTION

1. Inspect:
- Throttle cable
 - Front and rear brake cable
 - Speedometer cable
- Check for damage to the cable insulation
Corrosion/Damage → Replace.
Obstruction → Reroute.
Unsmoothness → Lubricate.

LUBRICATION

Cable Lubrication

Cable lubrication steps:

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

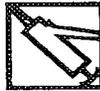
 SAE 10W30 Type SE Motor Oil

FRONTFORK INSPECTION/ REAR SHOCK ABSORBER INSPECTION



Lever Lubrication

Lubricate pivoting part of each lever



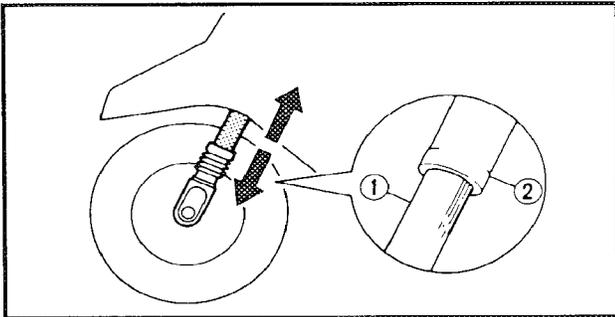
SAE 10W30 Type SE Motor Oil

Centerstand Lubrication

Lubricate the pivoting part.



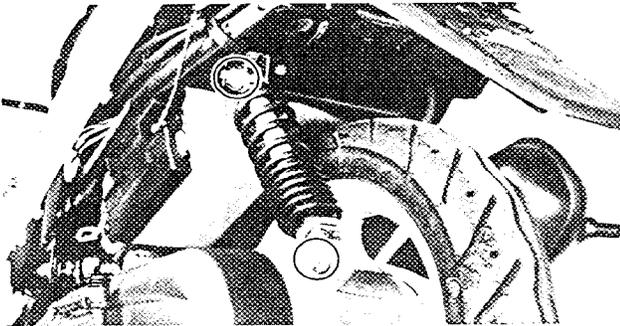
SAE 10W30 Type SE Motor Oil



FRONTFORK INSPECTION

1. Inspect:

- Front fork
 - Bends/Damage → Inner tube comp, Fork Ass'y – Replace.
 - Grease leakage → Inner tube comp, Fork Ass'y – Replace.
 - Unsmooth operation → Fork Ass'y – Replace.



REAR SHOCK ABSORBER INSPECTION

1. Inspect:

- Rear shock absorber
 - Oil leaks/Damage → Replace.

2. Check

- Tightening torque

	Upper (nut)	32 Nm (3.2 m • kg, 23 ft • lb)
	Lower (bolt)	18 Nm (1.8 m • kg, 13 ft • lb)

ELECTRICAL BATTERY INSPECTION

NOTE: _____

Since the MF battery is of a sealed-type construction, it is impossible to measure the specific gravity of the electrolyte in order to check the state of charge in the battery. Therefore, to check the state of charge in the battery, voltage must be measured at the battery terminals.

CAUTION: _____

CHARGING METHOD

- This battery is sealed type. Never remove sealing caps even when charging. With the sealing cap removed, this balancing will not be maintained, and battery performance will lower gradually.
- Never add water. If distilled water is added, chemical reaction in the battery will not proceed in the normal way, thus making it impossible for the battery to operate regularly.
- The charging time, charging current and charging voltage for the MF battery is different than general type batteries.

The MF battery should be charged as instructed in the "Charging method". Should the battery be overcharged, the electrolyte level will lower extremely. Therefore, use special care when charging the battery.

- Avoid using any electrolyte other than specified. The specific gravity of the MF battery electrolyte is 1.32 at 20°C (68°F). (The specific gravity of the general type battery electrolyte is 1.28.) If the electrolyte whose specific gravity is less than 1.32, the sulfuric acid will decrease and thus low battery performance will result. Should any electrolyte, whose specific gravity is 1.32 or more, be used, the battery plates will corrode and battery life will shorten.



WARNING _____

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

Always follow these preventive measures:

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



Antidote (EXTERNAL):

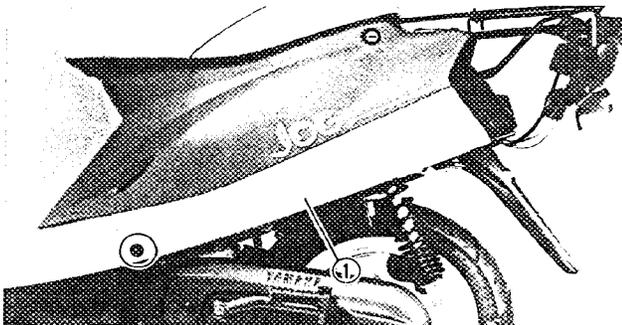
- SKIN-Flush with water.
- EYES-Flush with water for 15 minutes and get immediate medical attention.

Antidote (INTERNAL):

- Drink large quantities of water or milk follow with milk of magnesia, beaten egg, or vegetable oil. Get immediate medical attention. Batteries also generate explosive hydrogen gas, therefore you should always follow these preventive measures:

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

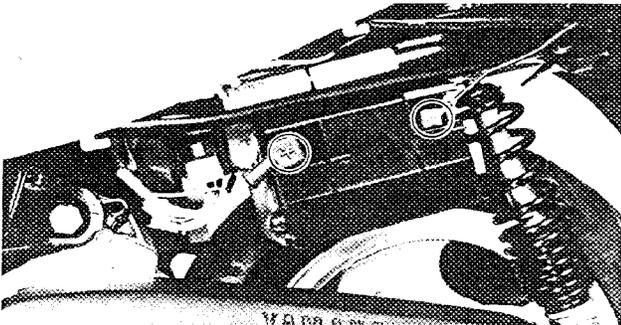
KEEP BATTERIES AND ELECTROLYTE OUT OF REACH OF CHILDREN.



1. Remove:

- Side cover ① (left)

Refer to the "TAIL COVER AND FOOTREST BOARD" section.



2. Disconnect:

- Battery leads

CAUTION:

Disconnect the negative lead first and then disconnect the positive lead.

3. Remove:

- Battery

4. Check:

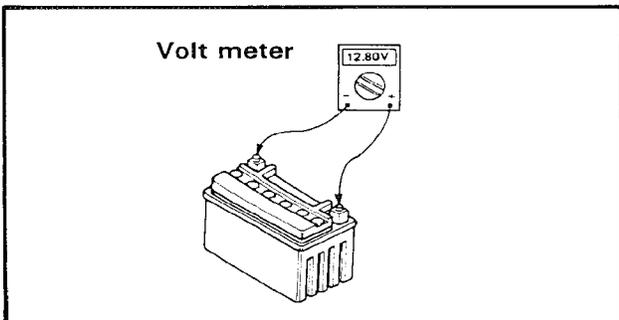
- Battery condition

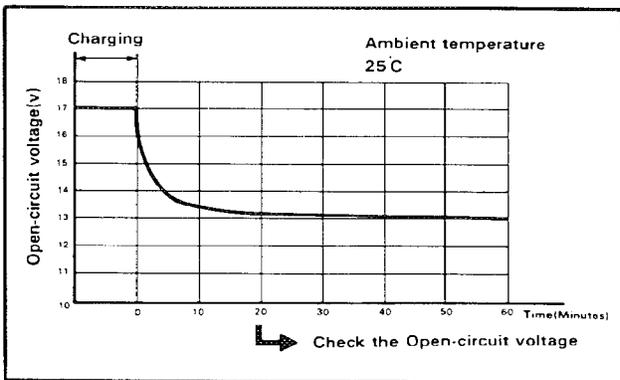
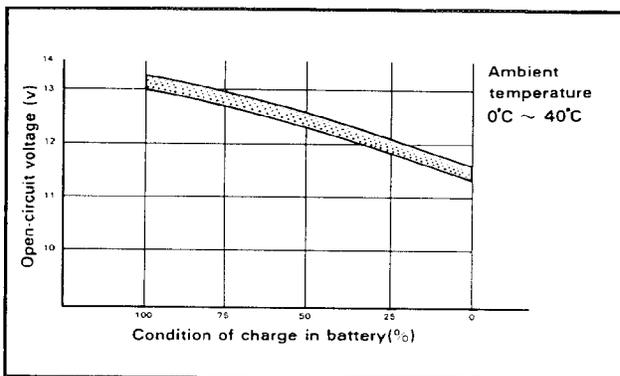
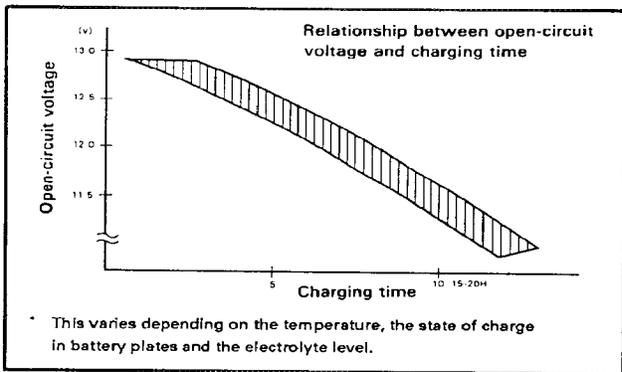
Battery condition checking steps:

- Connect the pocket tester to the battery terminals.

Tester (+) lead → Battery (+) terminal.

Tester (-) lead → Battery (-) terminal.





NOTE: _____
 The state of a discharged MF battery can be checked by measuring open circuit voltage (the voltage measured with the positive terminals being disconnected).

Open-circuit voltage	Charging time
12.8 V or higher	No charging is necessary
12.7 V - 11.5 V	5 - 10 hours
Less than 11.5 V	15 - 20 hours

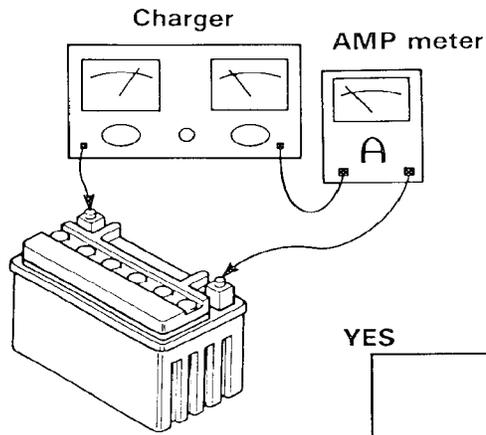
● Battery condition chart shown.

5. Charging method of MF battery

CAUTION: _____

- If it is impossible to set the standard charging current, be careful not to overcharge.
- When charging the battery, be sure to remove it from the machine. (If charging has to be done with the battery mounted on the machine for some reason, be sure to disconnect the wire at the negative terminal)
- Never remove the sealing plug from the MF battery.
- Use special care so that charging clips are in a full contact with the terminal and that they are not shorted. (A corroded clip of the charger may cause the battery to generate heat at the contact area. A weak clip spring may cause sparks.)
- Before removing the clips from the battery terminals, be sure to turn off the power switch of the charger.
- Change in the open-circuit voltage of the MF battery after being charged is shown below. As shown in the figure, the open-circuit voltage is stabilized 30 minutes after charging has been completed.
 Therefore, to check the condition of the battery, measure the open-circuit voltage 30 minutes after charging has been completed.

Charging method using a variable-current (voltage) type charger



Measure the open-circuit voltage prior to charging.

NOTE: _____
Voltage should be measured 30 minutes after the machine is stopped.

Connect a charger and AMP meter to the battery and start charging.

NOTE: _____
Set the charging voltage at 16-17 v. (If the setting is lower, charging will be insufficient. If too high, the battery will be over-charged.)

Make sure the current is higher than the standard charging current written on the battery.

YES

NO

Adjust the voltage so that current is at standard charging level.

By turning the charging voltage adjust dial, set the charging voltage at 20 - 25 v.

Monitor the amperage for 3-5 minutes to check if the standard charging current is reached.

1A or more

If the current is more than 1 amp, adjust the voltage to 16 - 17 v and continue charging.

NO

Set the timer according to the charging time suitable for the open-circuit voltage.

1A or less

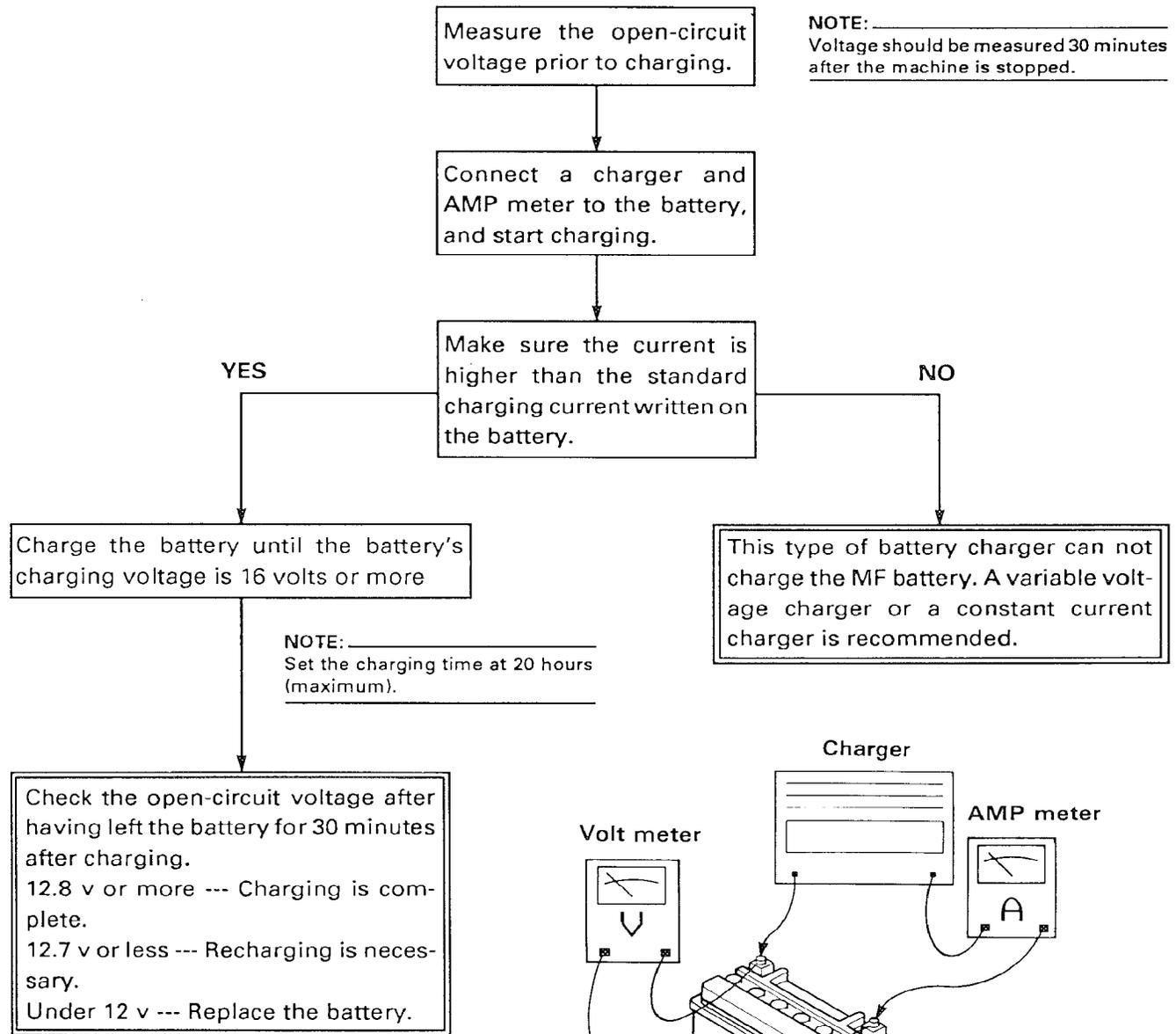
After 5 minutes, adjust the voltage to 16-17 v, and continue charging.

If current does not exceed standard charging current after 5 minutes, replace the battery.

In case that charging requires more than 5 hours, it is advisable to check the charging current after a lapse of 5 hours. If there is any change in the amperage, readjust the voltage to obtain the standard charging current.

Measure the battery open-circuit voltage after having left the battery unused for more than 30 minutes.
12.8 v or more --- Charging is complete.
12.7 v or less --- Recharging is required.
Under 12.0 v --- Replace the battery.

Charging method using a constant-voltage type charger





Charging method using a constant current type charger (Exclusive for MF battery)

Measure the open-circuit voltage prior to charging.

NOTE: _____
Voltage should be measured 30 minutes after the machine is stopped.

Connect a charger and AMP meter to the battery, and start charging.

After one hour of charging, make sure the rated charging current of the charge is flowing by checking AMP meter.

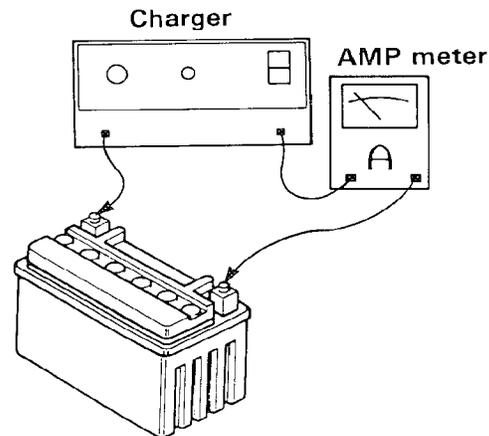
YES

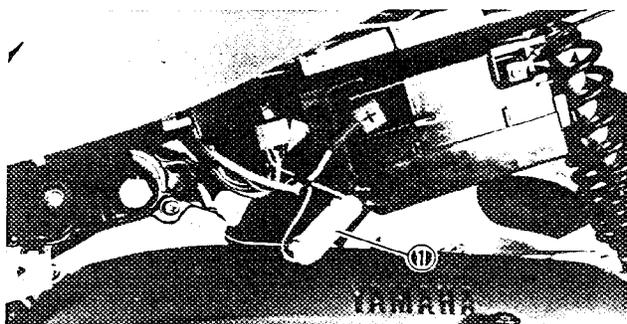
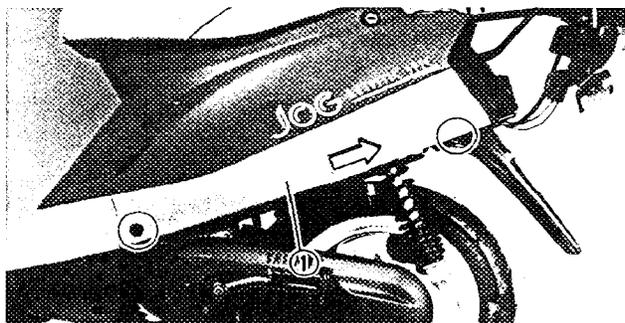
NO

Since the charging current is constant, the charging time varies depending on the battery capacity. Set the charging time according to the instructions specified for the charger.

If rated current is not flowing, replace the battery.

Measure the battery open-circuit voltage after having left the battery unused for more than 30 minutes.
12.8 v or more --- Charging is complete.
12.7 v or less --- Recharging is required
Under 12.0 v --- Replace the battery.





FUSE INSPECTION

1. Remove:
 - Side cover ① (left)

2. Inspect:
 - Fuse ①
 - Defective → Replace.

Blown fuse procedure steps:

- Turn off ignition and the circuit.
- Install a new fuse of proper amperage.
- Turn on switches to verify operation of electrical device.
- If fuse blows immediately again, check circuit in question.

⚠ WARNING

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

Description	Amperage	Quantity
Main	7A	1

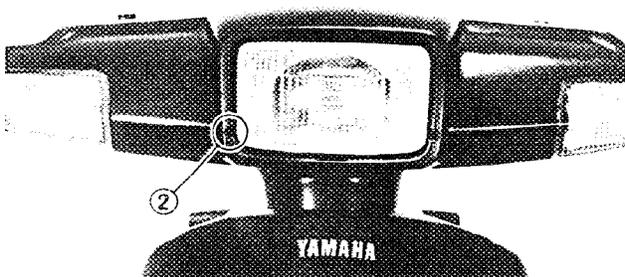
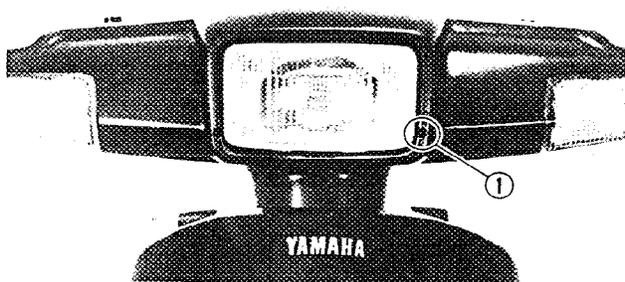
HEADLIGHT BEAM ADJUSTMENT

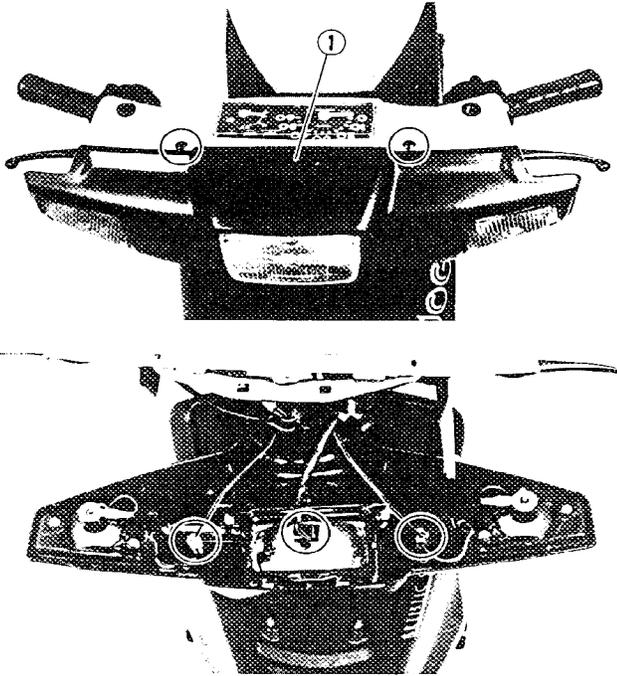
1. Adjust:
 - Headlight (vertically)

Vertical adjustment	
Higher	Loosen the adjusters ①
Lower	Tighten the adjusters ①

- Headlight (horizontal)

Horizontal adjustment	
Right	Tighten the adjuster ②
Left	Loosen the adjusters ②





HEADLIGHT BULB REPLACEMENT

1. Remove:
 - Handlebar cover (front) ①
2. Disconnect:
 - Headlight leads
 - Flasher light leads
3. Remove:
 - Headlight bulb cover
 - Headlight bulb
4. Install:

When installing the handlebar cover, reverse the "REMOVAL" procedure.

**CHAPTER 4.
ENGINE OVERHAUL**

ENGINE REMOVAL C-12

 TAIL COVER AND FOOTREST BOARD C-12

 CARBURETOR TOP COVER C-12

 MUFFLER ASSEMBLY C-12

 CABLES, LEADS AND PIPES C-12

 ENGINE REMOVAL C-13

ENGINE DISASSEMBLY C-13

 CARBURETOR C-13

 REAR WHEEL C-13

 CENTER STAND C-13

 CYLINDER HEAD AND CYLINDER C-13

 PISTON PIN AND PISTON C-14

 KICK STARTER C-14

 PRIMARY SHEAVE C-14

 SECONDARY SHEAVE C-15

 STARTER SYSTEM C-15

 TRANSMISSION C-16

 C.D.I. MAGNETO C-16

 AUTOLUBE PUMP D-1

 CRANKCASE AND CRANKSHAFT D-1

INSPECTION AND REPAIR D-2

 CYLINDER HEAD D-2

 CYLINDER AND PISTON D-2

 PISTON RINGS D-3

 PISTON PIN AND PISTON PIN BEARING D-3

 KICK STARTER D-4

 TRANSMISSION D-4

 AUTOLUBE PUMP D-4

 CRANKSHAFT D-4

 PRIMARY SHEAVE D-5

 SECONDARY SHEAVE D-5

 V-BELT D-6

 STARTER CLUTCH AND GEARS D-6

ENGINE ASSEMBLY AND ADJUSTMENT D-7

 CRANKSHAFT AND CRANKCASE D-7

 AUTOLUBE PUMP D-9

 C.D.I. MAGNETO D-9

 TRANSMISSION D-10

 STARTER SYSTEM D-11

 SECONDARY SHEAVE D-13

 PRIMARY SHEAVE D-13

 KICK STARTER D-14

 PISTON PIN AND PISTON D-16

 CYLINDER AND CYLINDER HEAD D-16

 REMOUNTING ENGINE E-1



ENGINE OVERHAUL

ENGINE REMOVAL

NOTE:

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

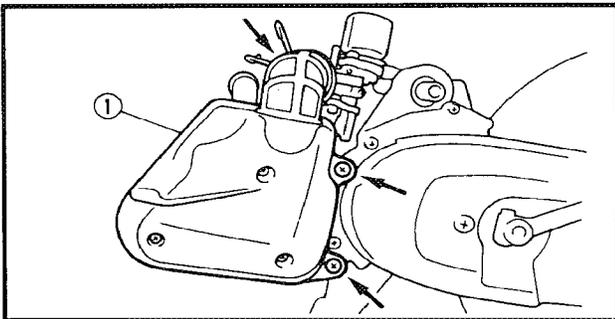
- Cylinder head
- Cylinder
- Piston
- C.D.I. magneto
- Starter motor
- Primary and secondary sheave
- Transmission

TAIL COVER AND FOOTREST BOARD

1. Remove:

- Seat
- Rear carrier
- Side covers (left and right)
- Tail cover
- Footrest board

Refer to "CHAPTER 3. – TAIL COVER AND FOOTREST BOARD" section.



CARBURETOR TOP COVER

1. Remove:

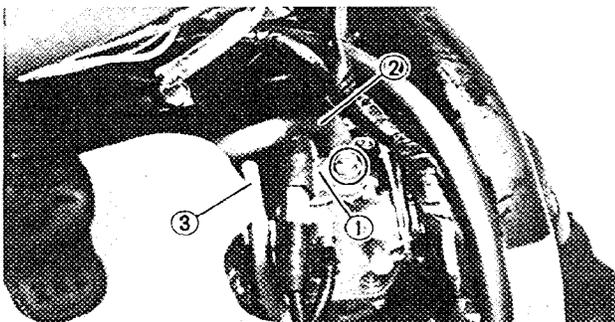
- Air cleaner case assembly ①

2. Remove:

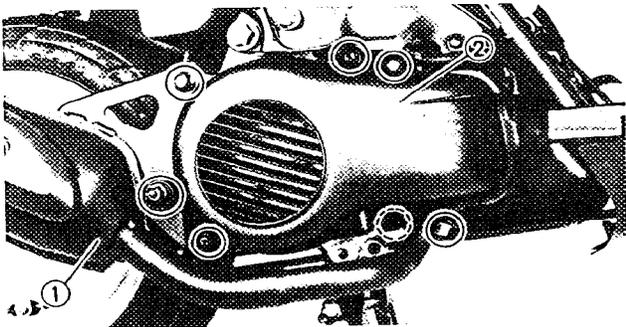
- Carburetor top cover ①

NOTE:

Cover the carburetor with a clean rag to prevent dirt or foreign matter into the carburetor.

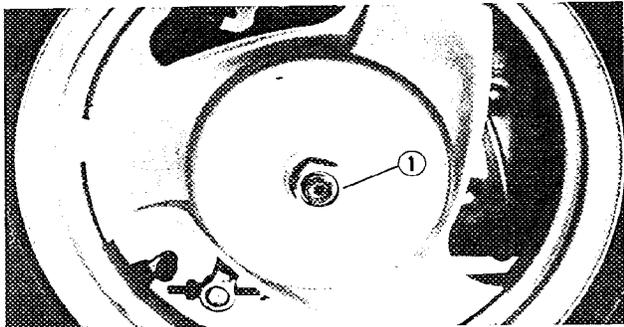


- Fuel hose ②
- Vacuum hose ③



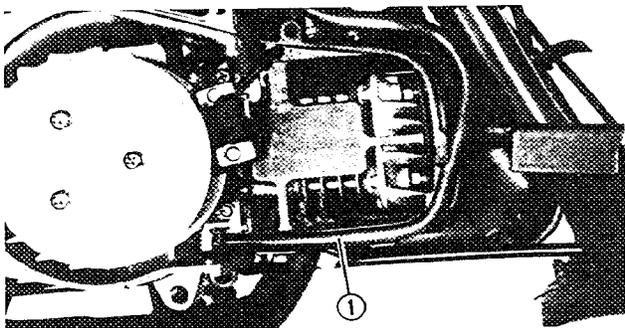
MUFFLER ASSEMBLY

1. Remove:
 - Muffler assembly ①
 - Fan cover ②



2. Loosen:
 - Rear wheel axle nut ①

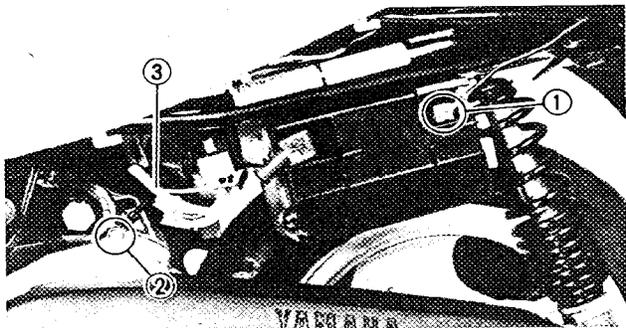
NOTE: _____
 When loose the rear wheel axle nut, apply the rear brake.



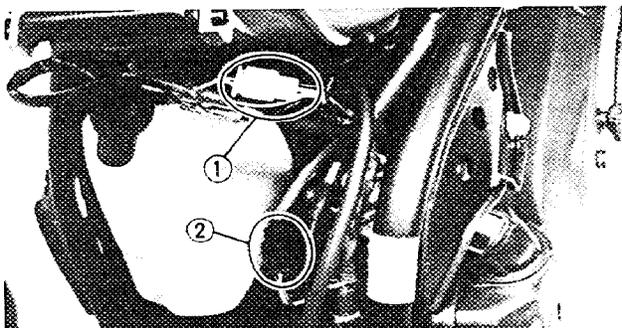
CABLES, LEADS AND PIPES

1. Remove:
 - Oil hose ① at oil pump side.

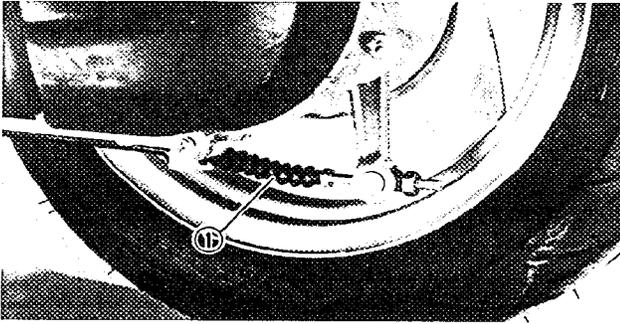
NOTE: _____
 Plug the oil hose so the oil will not drain out of it.



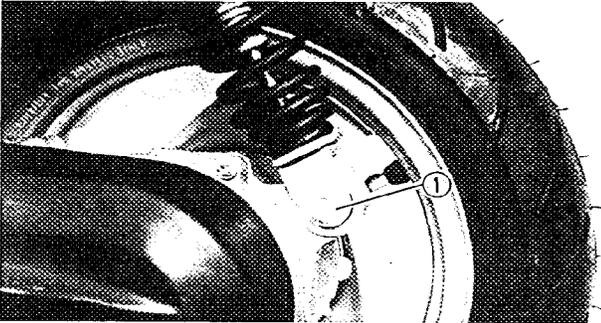
2. Remove:
 - Battery negative lead ①
 - Earth lead ②
3. Disconnect:
 - Starter moter lead ③



4. Remove:
 - Spark plug cap
5. Disconnect:
 - CDI magneto lead ①
 - Auto choke unit lead ②

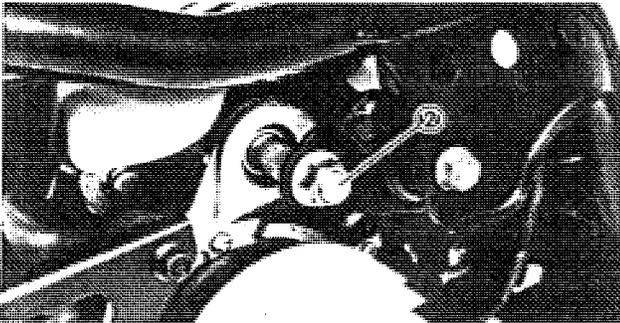


6. Remove:
- Rear brake cable ①

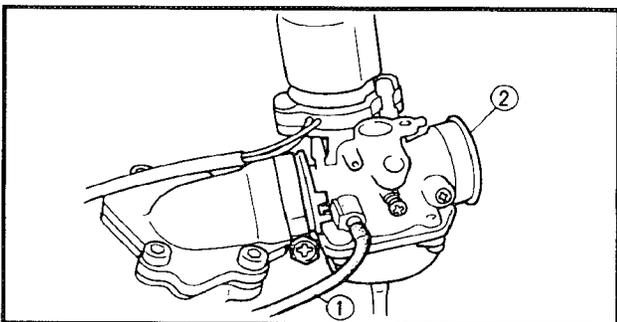


ENGINE REMOVAL

1. Remove:
- Rear shock absorber bolt ① (lower)
 - Engine mounting bolt ②

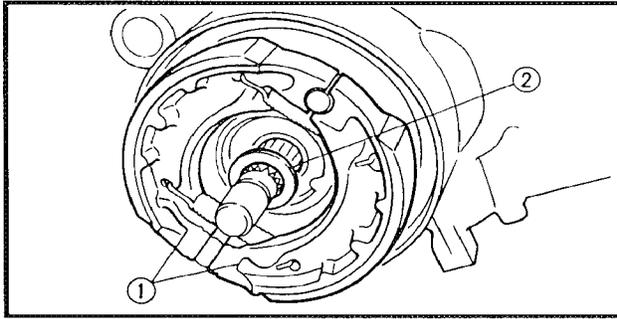


2. Remove:
- Engine
- Lift up the frame and remove the engine.
3. Place the frame on a suitable stand.



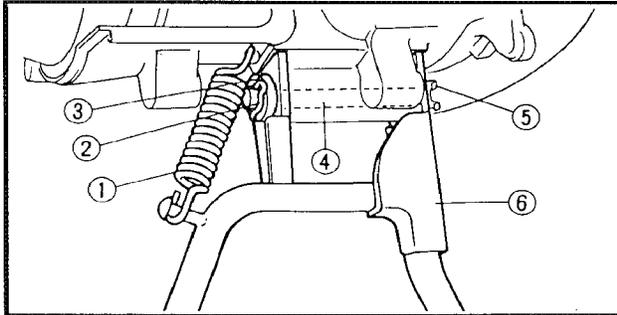
**ENGINE DISASSEMBLY
CARBURETOR**

1. Remove:
- Oil delivery hose ①
 - Carburetor ②

**REAR WHEEL**

1. Remove:

- Rear wheel
- Brake shoes ①
- Plane washer ②

**CENTER STAND**

1. Remove:

- Spring ①
- Clip ②
- Rubber washer ③
- Shaft ④
- Clamp ⑤
- Center stand ⑥

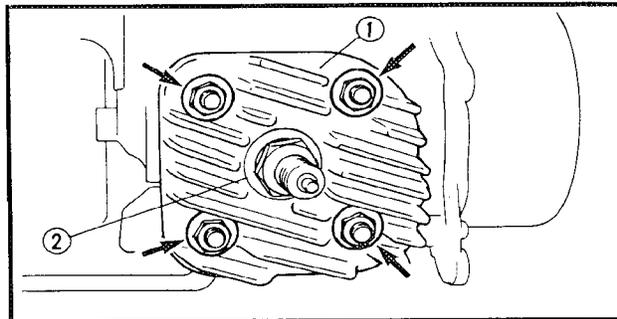
CYLINDER HEAD AND CYLINDER**NOTE:** _____

With the engine mounted, the cylinder head, cylinder, and piston can be maintained by removing the following parts.

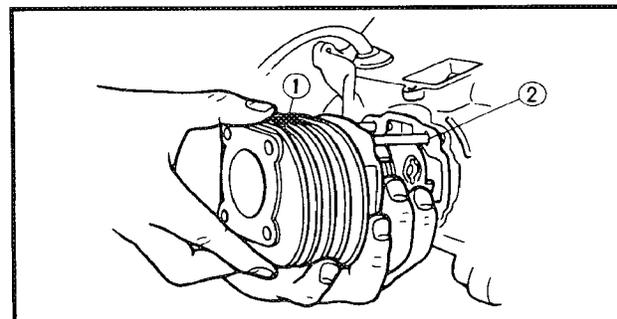
- Cover and sidecover (left and right)
- Footrest board
- Fan cover and air shroud
- Muffler assembly and cylinder stud bolt

1. Remove:

- Air should
- Cylinder head ①
- Cylinder head gasket

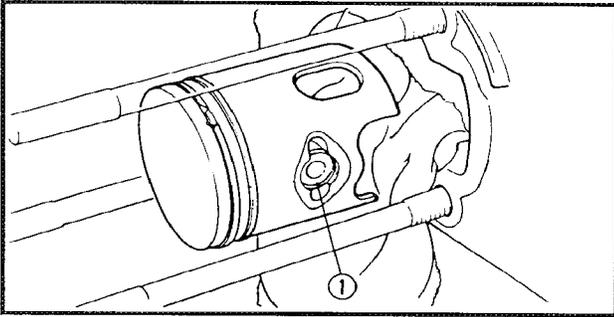
**NOTE:** _____

- Before loosening the cylinder head, loosen the spark plug ② .
- The cylinder head holding nuts should be loosened 1/2 turn each time, and remove.



2. Remove:

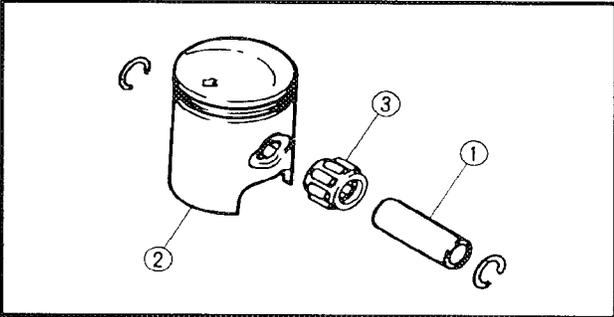
- Cylinder ①
- Cylinder gasket ②



PISTON PIN AND PISTON

1. Remove:
 - Piston pin clip ①

NOTE: _____
 Before removing the piston pin clip, cover the crankcase with a clean rag so you will not accidentally drop the clip into the crankcase.



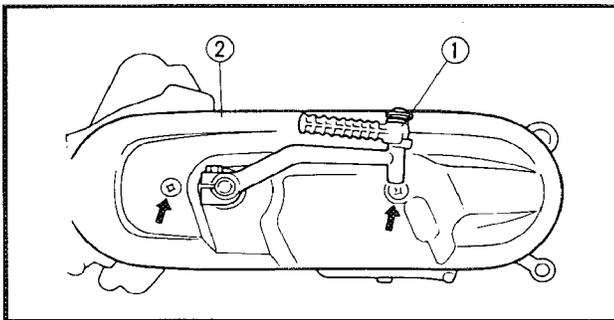
2. Remove:
 - Piston pin ①
 - Piston ②
 - Piston pin bearing ③

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

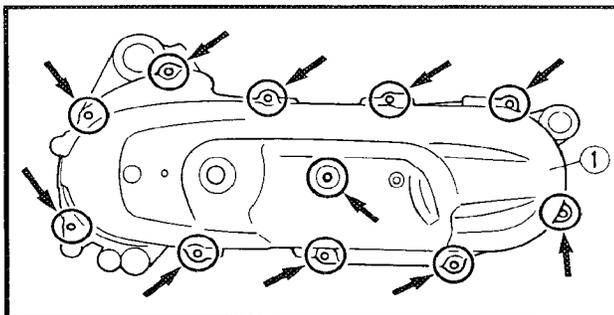
KICK STARTER

NOTE: _____
 With the engine mounted, the kick starter can be maintained by removing the following parts.

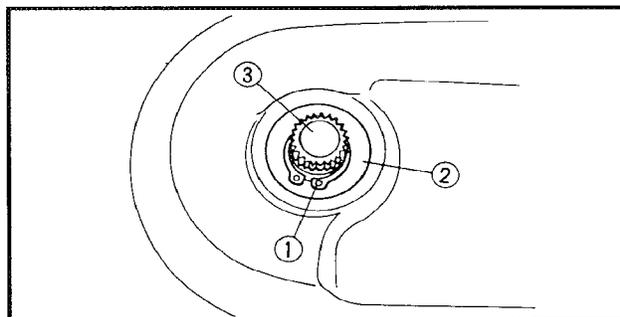
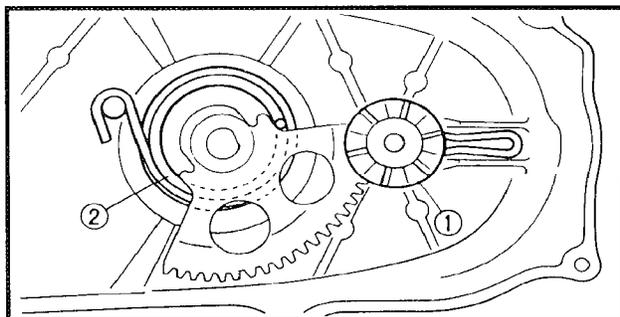
- Air cleaner case assembly



1. Remove:
 - Kick crank ①
 - Cover ②



2. Remove:
 - Crankcase cover ① (left)



3. Remove
 - Kick pinion gear ①

NOTE: _____
When remove the kick pinion gear, operate the kick axle.

4. Unhook
 - Return spring ②

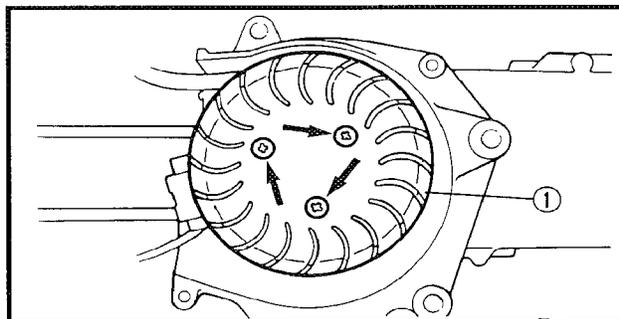
5. Remove:
 - Circlip ①
 - Plain washer ②
 - Kick shaft ③

PRIMARY SHEAVE

NOTE: _____
With the engine mounted, the primary and secondary sheave can be maintained by removing the following parts.

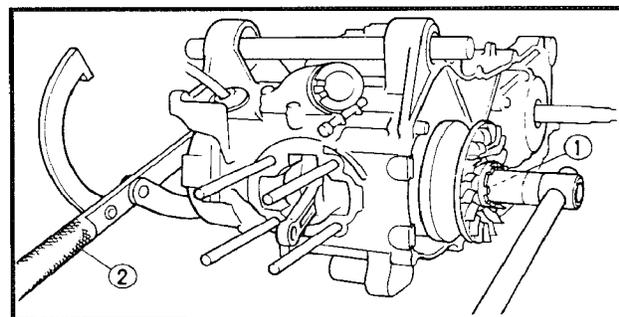
- Cover and side cover (left and right)
- Footrest board
- Fan cover
- Crankcase cover (left)

1. Remove:
 - Fan ①

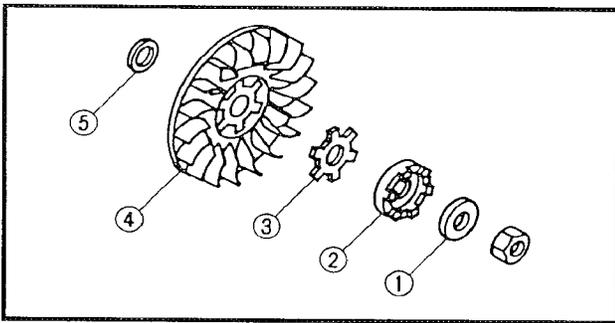


2. Remove:
 - Nut ① (primary sheave)

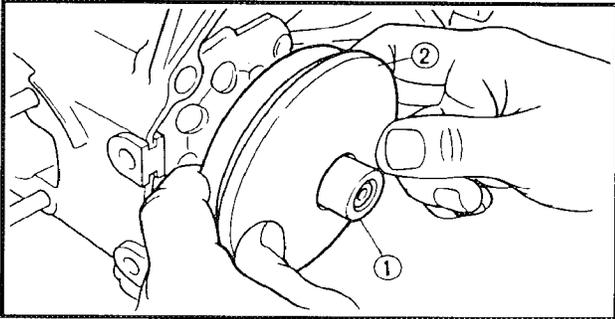
NOTE: _____
When loosening the nut (primary sheave), hold the C.D.I. magneto using Flywheel Holding Tool ②.



Flywheel Holding Tool:
YU-01235

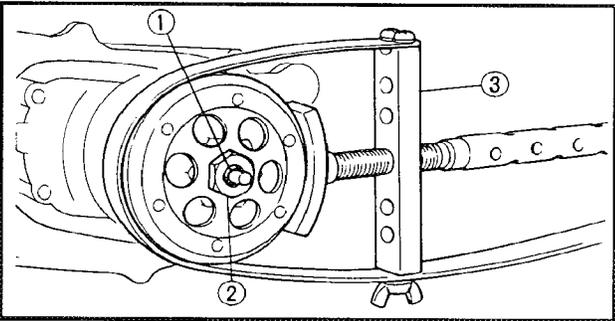


3. Remove:
- Conical spring washer ①
 - One-way clutch ②
 - Washer ③
 - Primary fixed sheave ④
 - Shim ⑤
 - V-Belt



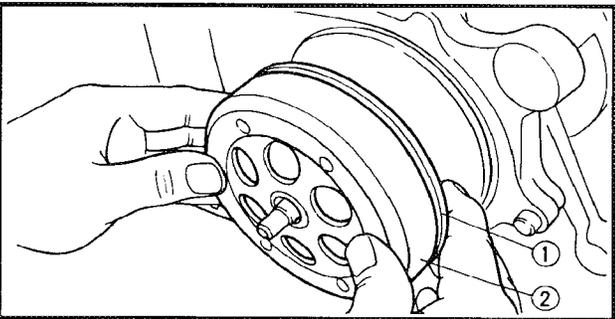
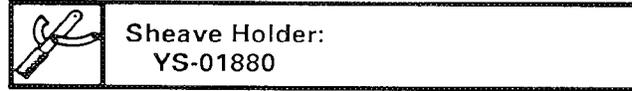
4. Remove:
- Collar ①
 - Primary sheave assembly ②

SECONDARY SHEAVE



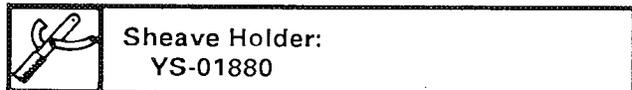
1. Remove:
- O-ring ①
 - Nut ② (secondary sheave)

NOTE: _____
Hold the secondary sheave using Sheave Holder ③.



2. Remove:
- Clutch housing ①
 - Secondary sheave assembly ②
 - Crankcase cover gasket
 - Dowel pins

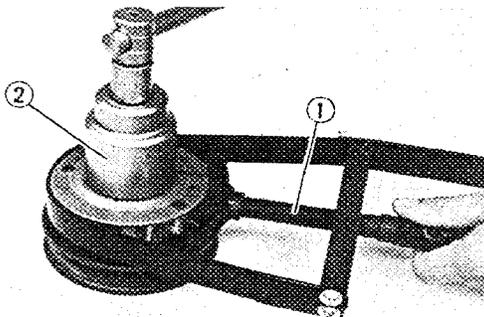
3. Attach:
- Sheave Holder ①
 - Socket Wrench (41MM) ②

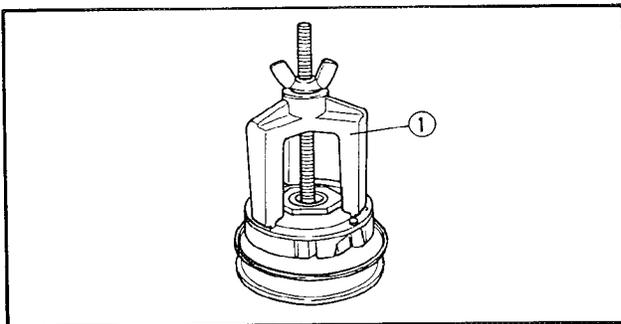


4. Loosen:
- Clutch securing nut

CAUTION: _____

Do not remove the clutch securing nut yet.





5. Attach:

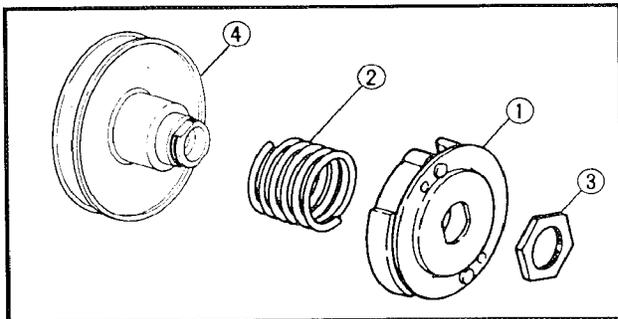
- Clutch Spring Holder ①

NOTE:

Compress the secondary sheave by Clutch Spring Holder ① .



Clutch Spring Holder:
YS-28891

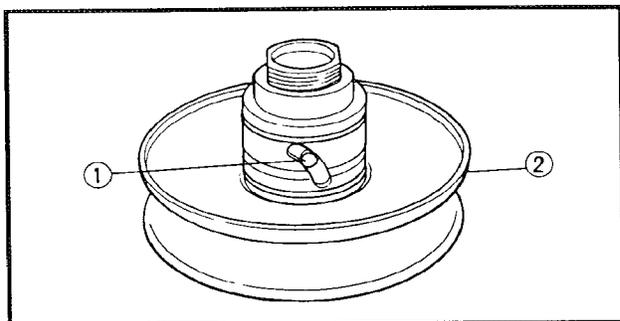


6. Remove:

- Clutch securing nut ③

7. Remove:

- Clutch assembly ①
- Clutch spring ②
- Spring seat ④



8. Remove:

- Guide pins ①
- Secondary sliding sheave ②

STARTER SYSTEM

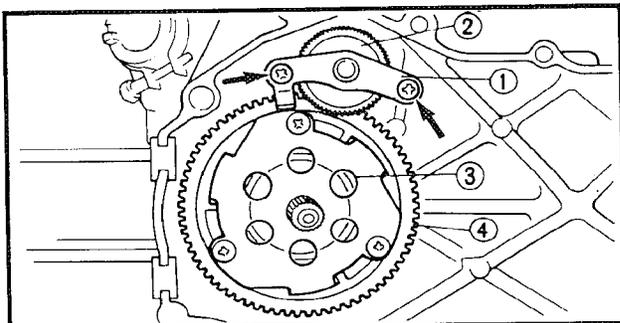
NOTE:

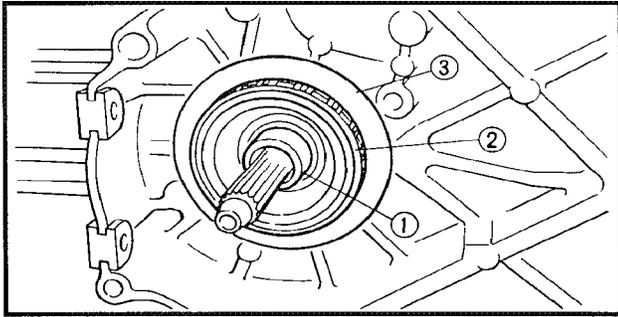
With the engine mounted, the starter system can be maintained by removing the following parts.

- Footrest board and Fan cover
- Muffler assembly and Rear wheel
- Crankcase cover (left)
- Primary sheave

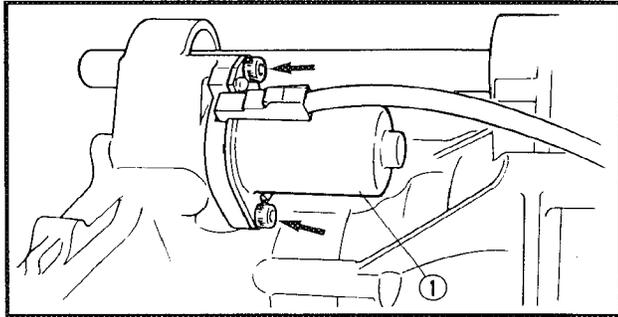
1. Remove:

- Plate ① (idle gear)
- Idle gear ②
- Starter clutch assembly ③
- Washer
- Starter wheel gear ④





2. Remove:
- Collar ①
 - Bearing ②
 - Washer ③



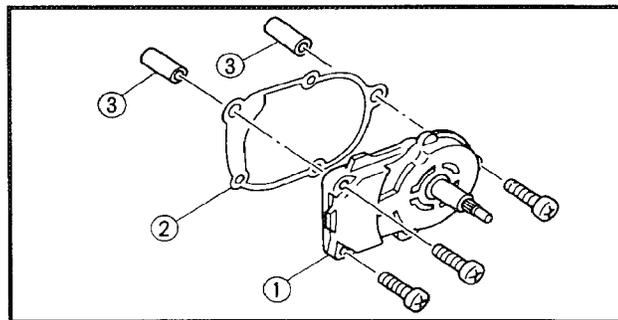
3. Remove:
- Starter motor ①

TRANSMISSION

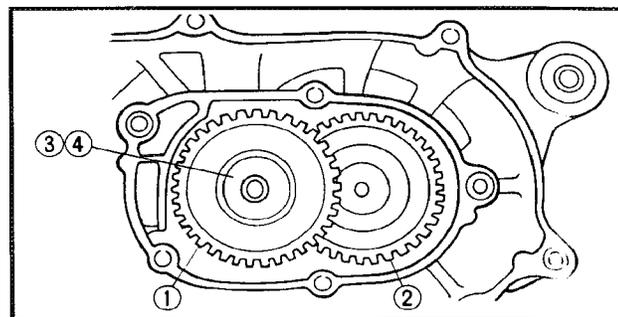
NOTE:

With the engine mounted, the transmission can be maintained by removing the following parts.

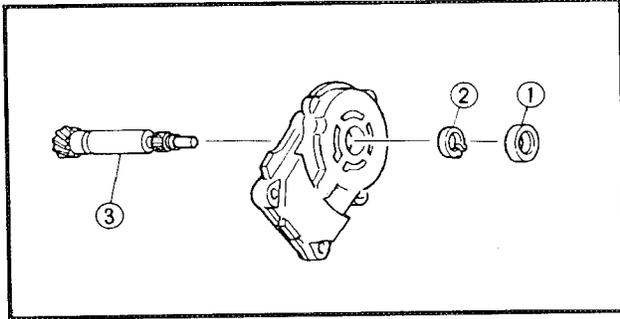
- Air cleaner case assembly
- Muffler assembly
- Rear wheel
- Crank case cover (left)
- V-belt and Secondary sheave



1. Remove:
- Transmission case cover ①
 - Gasket ②
 - Dowel pins ③



2. Remove:
- Main axle ①
 - Drive axle ②
 - Plain washer ③
 - Conical spring washer ④

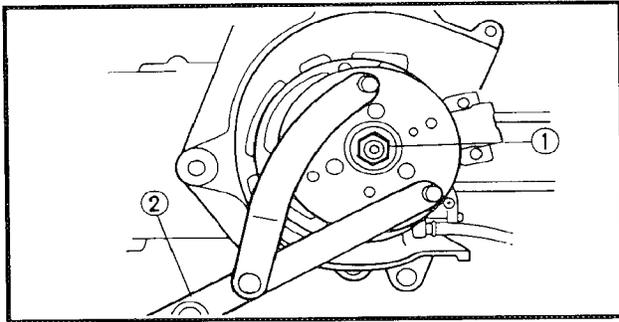


3. Remove:
- Oil seal ①
 - Circlip ②
 - Secondary sheave axle ③

C.D.I. MAGNETO

NOTE: _____
With the engine mounted, the C.D.I. magneto can be maintained by removing the following parts.

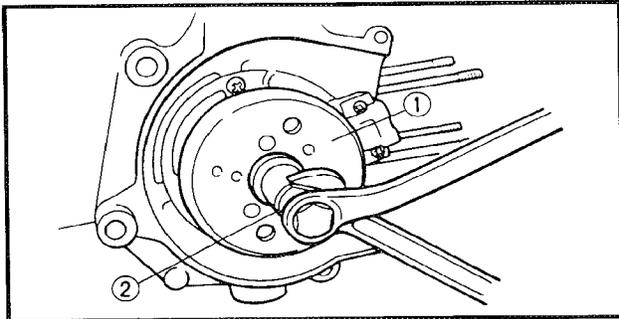
- Seat and rear carrier
- Tail cover and footrest board
- Fan cover
- Fan



1. Remove:
- Nut ① (rotor)
 - Plain washer

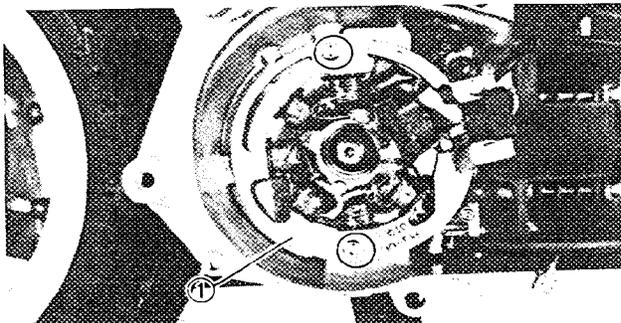
NOTE: _____
Hold the rotor to loosen the nut by the Flywheel Holding Tool ②.

	Flywheel Holding Tool: YU-01235
--	---

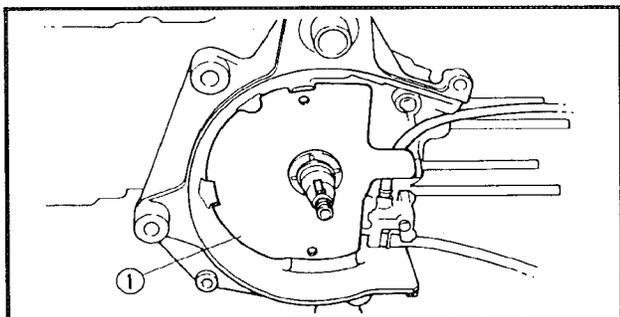


2. Remove:
- Rotor ①
 - Woodruff key
- Use the Flywheel Magneto Puller ②.

	Flywheel Magneto Puller: YM-01189
--	---



3. Remove:
- Stator assembly ①



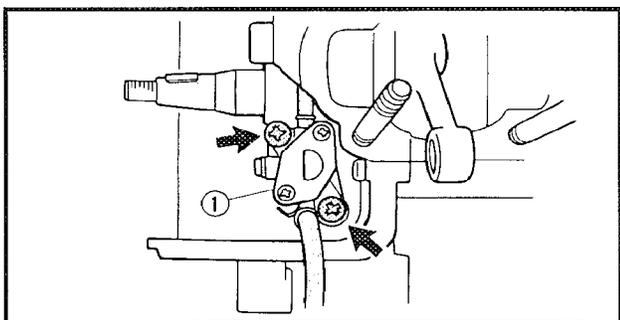
4. Remove:
- Gasket ①

AUTOLUBE PUMP

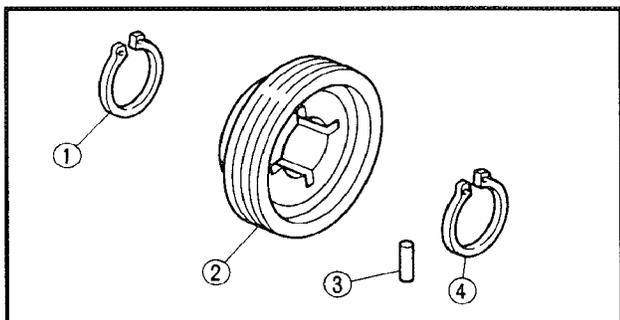
NOTE: _____

With the engine mounted, the autolube pump can be maintained by removing the following parts.

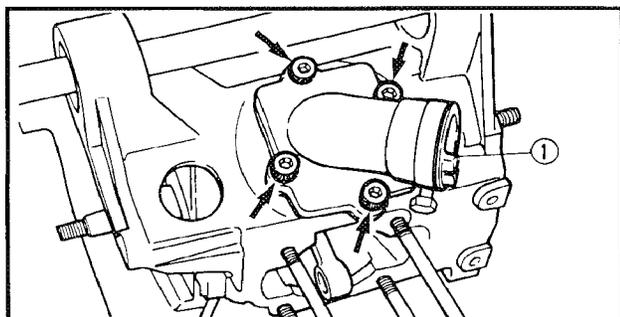
- Cover and side cover
- Footrest board
- Fan cover
- C.D.I. magneto



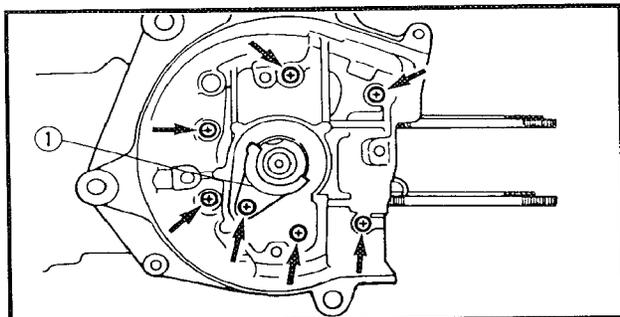
1. Remove:
- Autolube pump ①



2. Remove:
- Circlip ①
 - Pump drive gear ②
 - Pin ③
 - Circlip ④



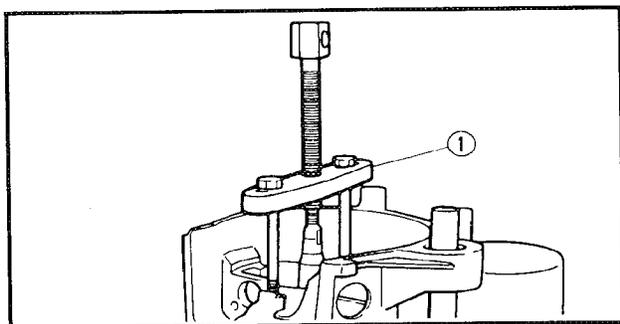
3. Remove:
- Carburetor joint ①
 - Reed valve ②
 - Reed valve gasket ③



CRANKCASE AND CRANKSHAFT

1. Remove:
 - Oil seal stopper ①
 - Screws (crankcase)

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



2. Attach:
 - Crankcase Separating Tool ①

	Crankcase Separating Tool: YU-01135
--	---

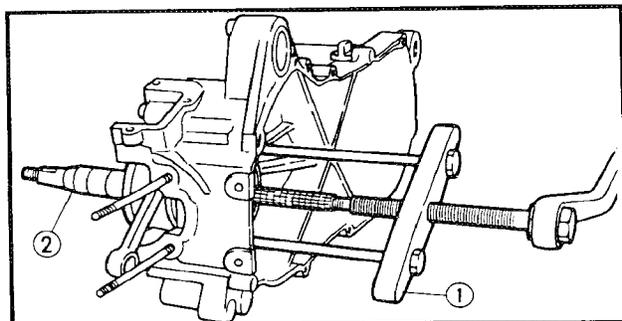
NOTE: _____
 Fully tighten the tool holding bolts, but make sure the tool body is parallel with the case. If necessary, one screw may be backed out slightly to level tool body.

3. Remove:
 - Crankcase (right)

As pressure is applied, alternately tap on the engine mounting bosses.

CAUTION: _____

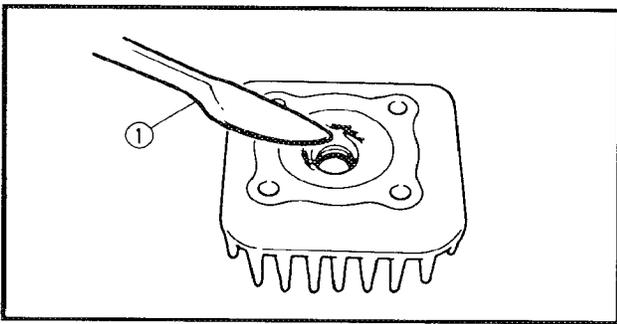
Use soft hammer to tap on the case half. Tap only on reinforced portions of case. Do not tap on gasket mating surface. Work slowly and carefully. Make sure the case halves separate evenly. If one end "hangs up", take pressure off the push screw, realign, and start over. If the cases do not separate,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



4. Attach:
 - Crankcase Separating Tool ①

	Crankcase Separating Tool: YU-01135
--	---

5. Remove:
 - Crankshaft ②



INSPECTION AND REPAIR

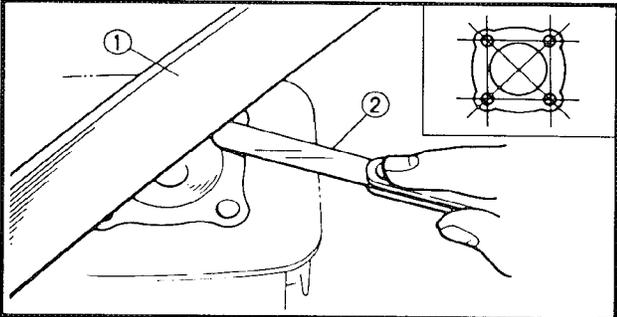
CYLINDER HEAD

1. Eliminate:

- Carbon deposits
Use a rounded scraper ①.

NOTE:

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



2. Inspect:

- Cylinder head warpage
Out of specification → Re-surface.

Warpage measurement and re-surfacement steps:

- Attach a straight edge ① and a thickness gauge ② on the cylinder head.
- Measure the warpage limit.

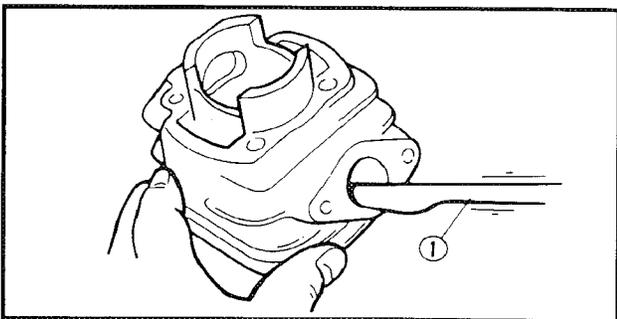
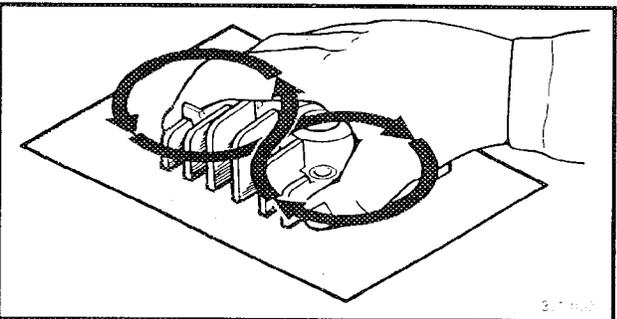


Warpage Limit:
0.02 mm (0.0008 in)

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

NOTE:

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



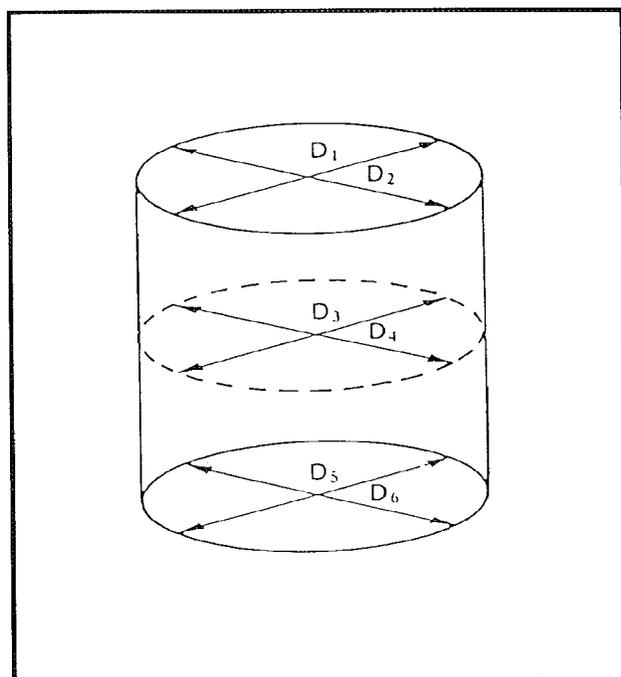
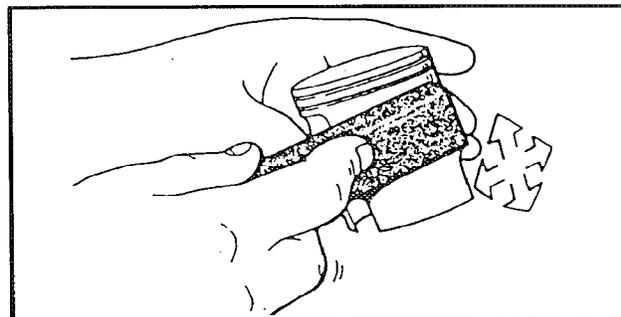
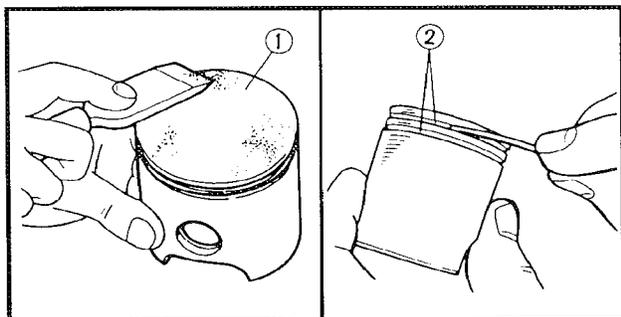
CYLINDER AND PISTON

1. Eliminate:

- Carbon deposits
Use a rounded scraper ①.

2. Inspect:

- Cylinder wall
Wear/Scratches → Rebore or replace.



3. Eliminate:
 - Carbon deposits
From the piston crown and ring grooves.
4. Remove:
 - Score marks and lacquer deposits
From the sides of piston.
Use a 600 ~ 800 grit wet sandpaper.

NOTE: _____
Sand in a crisscross pattern. Do not sand excessively.

5. Inspect:
 - Piston wall
Wear/Scratches/Damage → Replace.

6. Measure:
 - Piston-to cylinder clearance

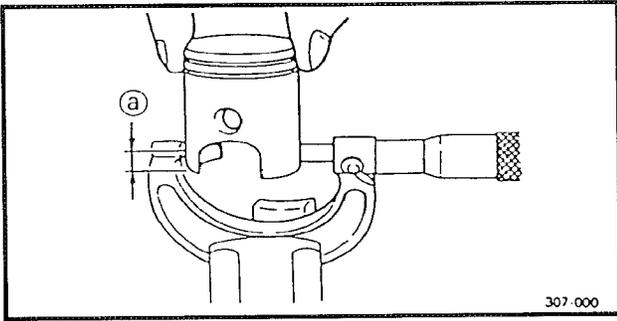
Piston-to cylinder clearance measurement steps:

First step:

- Measure the cylinder bore "C" with a Cylinder Bore Gauge.

NOTE: _____
Measure the cylinder bore "C" in parallel to and at right angles to the crankshaft. Then, find the average of the measurements.

	Standard	Wear Limit
Cylinder Bore "C"	39.99 ~ 40.01 mm (1.574 ~ 1.575 in)	40.10 mm (1.579 in)
Taper "T"	-	0.05 mm (0.0019 in)
Out of Round "R"	-	0.01 mm (0.0004 in)
<p>C = Maximum D T = (Maximum D₁ or D₂) - (Maximum D₅ or D₆) R = (Maximum D₁, D₃ or D₅) - (Minimum D₂, D₄ or D₆)</p>		



- If out of specification, rebore or replace cylinder, and replace piston and piston rings as a set.
- 2nd step:

- Measure the piston skirt diameter "P" with a micrometer.

Ⓐ 5.0 mm (0.20 in) from the piston bottom edge

Piston Size P	
Standard	39.95 ~ 39.97 mm (1.573 ~ 1.574 in)
Oversize 1	40.25 mm (1.585 in)
Oversize 2	40.50 mm (1.594 in)

- If out of specification, replace piston and piston rings as a set.

3rd step:

- Calculate the piston-to-cylinder clearance with following formula:

$$\text{Piston-to cylinder Clearance} = \text{Cylinder Bore "C"} - \text{Piston Skirt Diameter "P"}$$

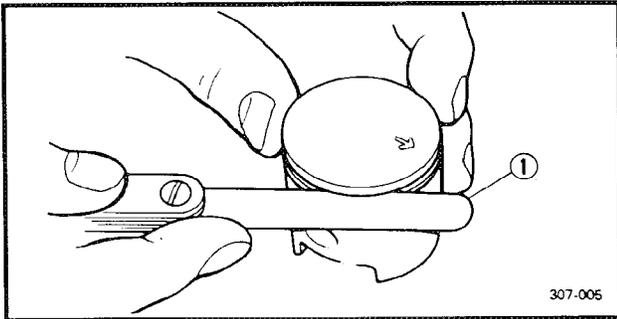
- If out of specification, rebore or replace cylinder, and replace piston and piston rings as a set.

 Piston-to-cylinder Clearance: 0.034 ~ 0.047 mm (0.0013 ~ 0.0018 in) Limit:0.1 mm (0.004 in)
--

PISTON RINGS

1. Measure:

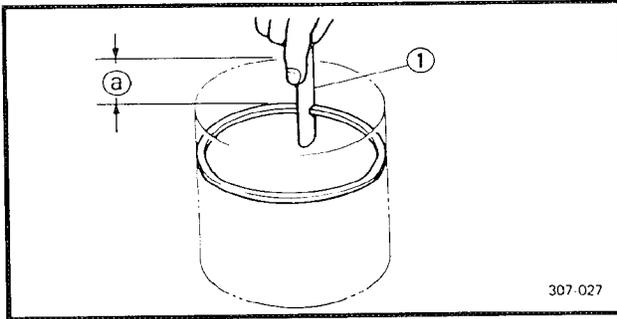
- Side clearance
 Out of specification → Replace piston and/or rings.
 Use a Feeler Gauge ① .



	Standard	Limit
Top ring	0.03 ~ 0.05 mm (0.0012 ~ 0.0020 in)	0.10 mm (0.004 in)
2nd ring	0.03 ~ 0.05 mm (0.0012 ~ 0.0020 in)	0.10 mm (0.004 in)

2. Install:

- Piston ring
 Into the cylinder
 Push the ring with the piston crown.



3. Measure:

- End gap
Out of specification → Replace rings as a set.
Use a Feeler Gauge ①.

	Standard	Limit
Top ring	0.15 ~ 0.35 mm (0.006 ~ 0.014 in)	0.70 mm (0.028 in)
2nd ring	0.15 ~ 0.35 mm (0.006 ~ 0.014 in)	0.70 mm (0.028 in)

① Measuring Point 20 mm (0.8 in)

4. Oversize piston ring size:

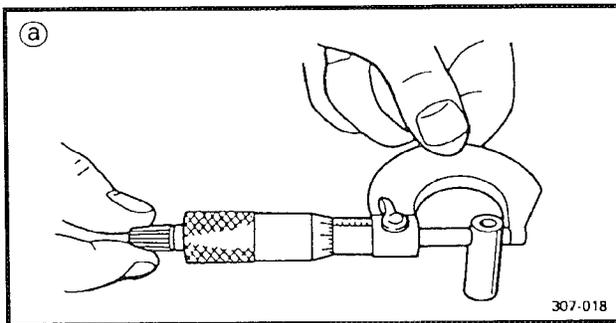
Ring size is stamped on top of the ring.

Oversize piston ring	
Oversize 1	25
Oversize 2	50

PISTON PIN AND PISTON PIN BEARING

1. Inspect:

- Piston pin
Blue discoloration/Groove → Replace, then inspect lubrication system.



2. Measure:

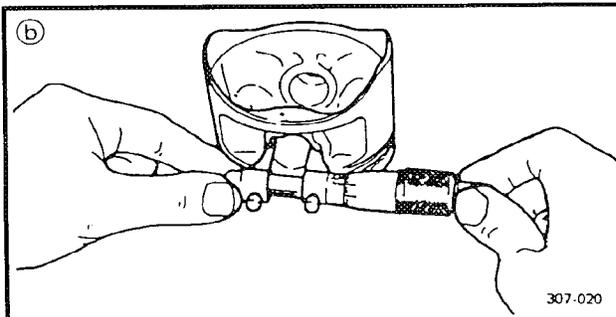
- Outside diameter ② (piston pin)
Out of specification → Replace.

 Out side diameter (piston pin): 9.996 ~ 10.000 mm (0.3935 ~ 0.3937 in)
--

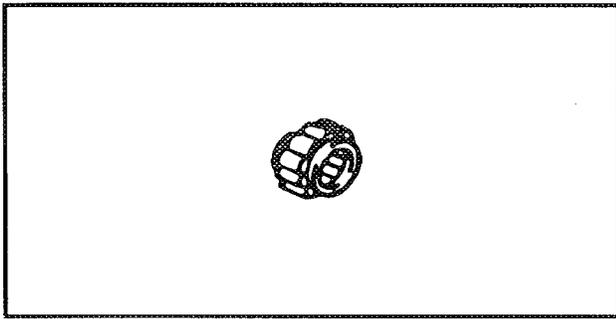
3. Measure:

- Piston pin-to-piston clearance
Out of specification → Replace piston.

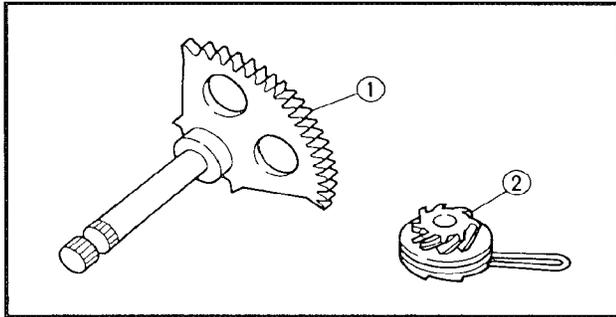
Piston pin-to-piston clearance = Bore size (piston pin) ③ – Outside diameter (piston pin) ②



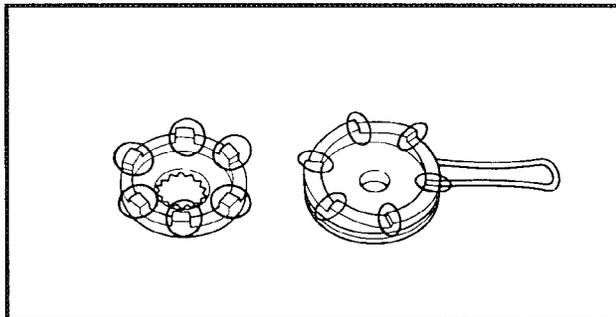
 Piston pin-to-piston clearance: 0.004 ~ 0.0019 mm (0.0002 ~ 0.0008 in) <Limit: 0.07 mm (0.028 in)>



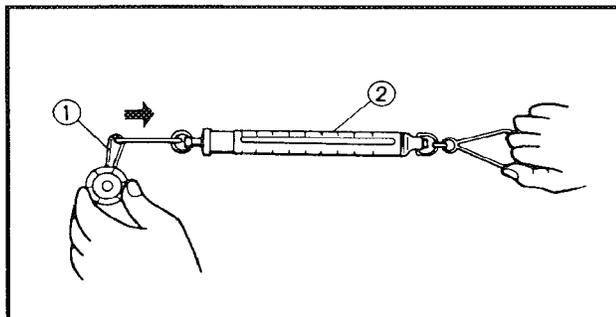
4. Inspect:
- Bearing (piston pin)
 - Pitting/Damage → Replace.

**KICK STARTER**

1. Inspect:
- Kick gear teeth ①
 - Kick pinion gear teeth ②
 - Burrs/Chips/Roughness/Wear → Replace.



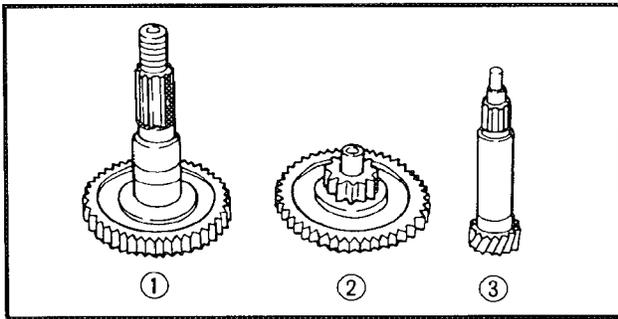
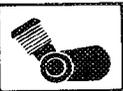
2. Inspect:
- Mating dogs (kick pinion gear and one-way clutch)
 - Rounded edges/Damage → Replace.



3. Measure:
- Clip tension (kick pinion gear)
 - Out of specification → Replace.
 - Use a spring balance.



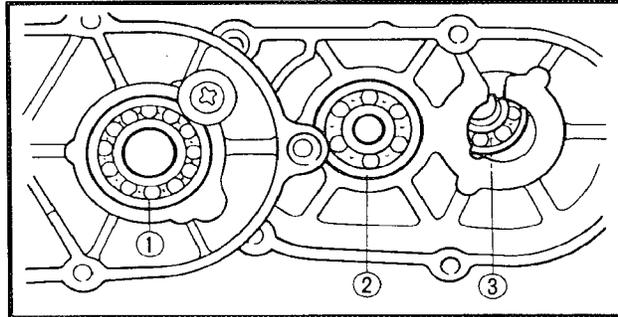
Standard Tension:
100 ~ 300 g (3.53 ~ 10.6 oz)



TRANSMISSION

1. Inspect:

- Drive axle ①
 - Main axle ②
 - Secondary sheave axle ③
- Burrs/Chips/Roughness/Wear → Replace.



2. Inspect:

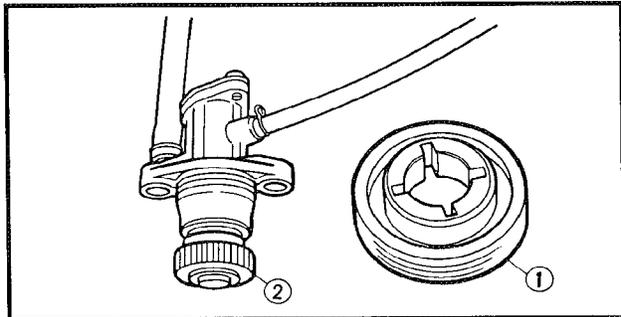
- Secondary sheave axle bearing ①
 - Main axle bearing ②
 - Drive axle bearing ③
- Spin the bearing inner race.
Excessive play/Roughness → Replace.
Pitting/Damage → Replace.

AUTOLUBE PUMP

Wear or an internal malfunction may cause pump output to vary from the factory setting. This situation is, however, extremely rare. If improper output is suspected, inspect the following:

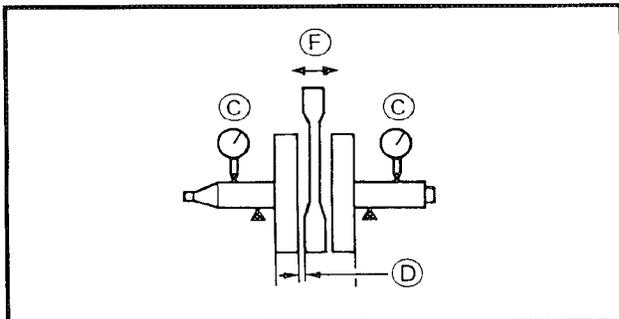
1. Inspect:

- Delivery line
Obstructions → Blow out.
- O-ring
Wear/Damage → Replace.



2. Inspect:

- Autolube pump drive gear teeth ①
 - Autolube pump driven gear teeth ②
- Pitting/Wear/Damage → Replace



CRANKSHAFT

1. Measure:

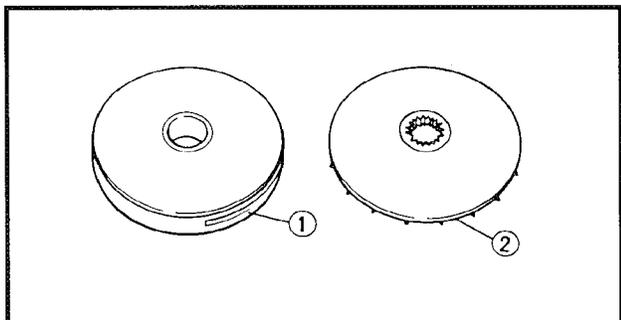
- Runout limit "C"
 - Connecting rod big end side clearance "D"
 - Small end free play limit "F"
- Out of specification → Replace.
Use V-Blocks, Dial Gauge and thickness gauge.



Runout Limit "C":
 0.03 mm (0.0012 in)
 Connecting Rod Big End Side
 Clearance "D":
 0.2 ~ 0.5 mm (0.008 ~ 0.02 in)
 Small End Free Play "F":
 0.4 ~ 0.8 mm (0.015 ~ 0.031 in)

2. Inspect:

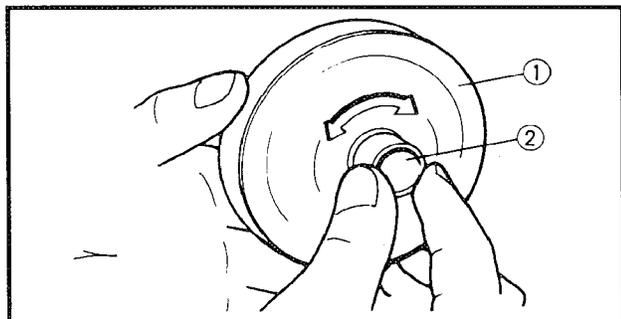
- Bearings (crankshaft)
 Spin the bearing inner race.
 Excessive play/Roughness → Replace.
 Pitting/Damage → Replace.



PRIMARY SHEAVE

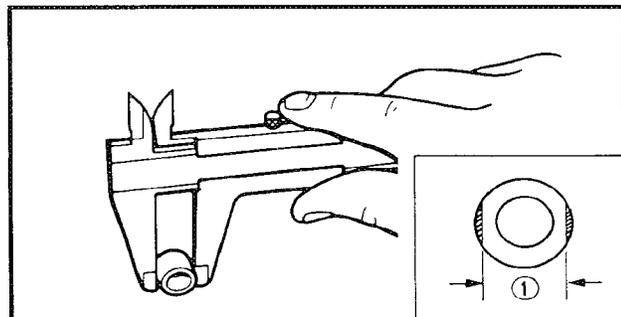
1. Inspect:

- Primary sliding sheave ①
- Primary fixed sheave ②
 Wear/Cracks/Scratch/Damage → Replace.



2. Check:

- Free movement
 Insert the collar into the primary sliding sheave, and check for free movement.
 Stick or excessive play → Replace the sheave or collar.

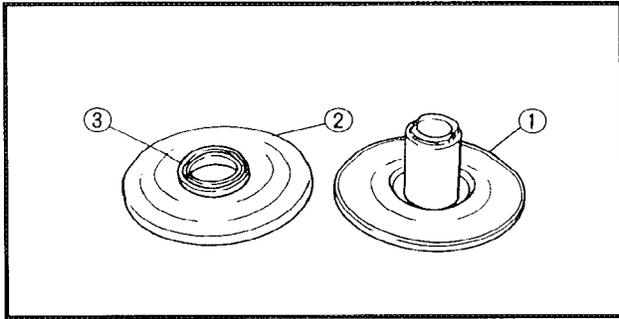


3. Measure:

- Out side diameter ① (weight)
 Out of specification → Replace.



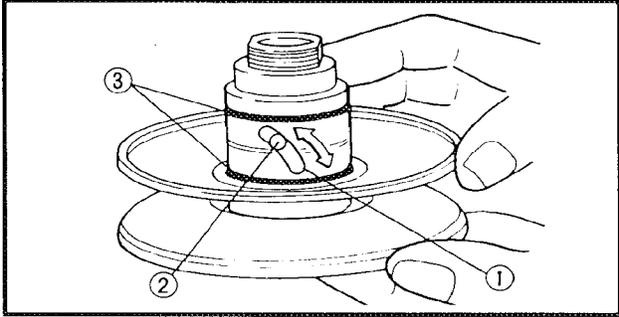
Out side diameter (weight)
 1.50 mm (0.59 in)
 <Limit 14.5 mm (0.57 in)>



SECONDARY SHEAVE

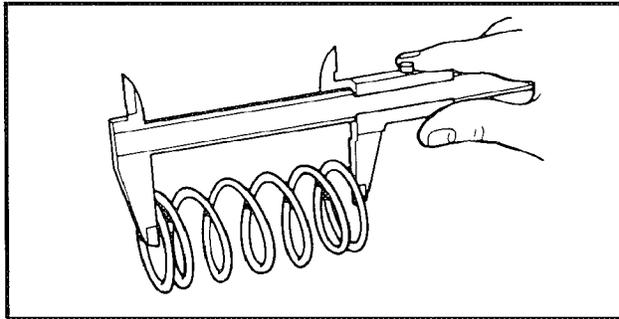
1. Inspect:

- Secondary fixed sheave ①
- Secondary sliding sheave ②
Scratch/Crack/Damage → Replace as a set.
- Oil seal ③
Damage → Replace.



2. Inspect:

- Torque cam groove ①
- Guide pin ②
Wear/Damage → Replace as a set.
- O-rings ③
Damage → Replace.



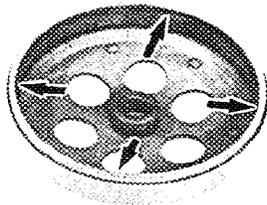
3. Measure:

- Clutch spring free length
Out of specification → Replace.

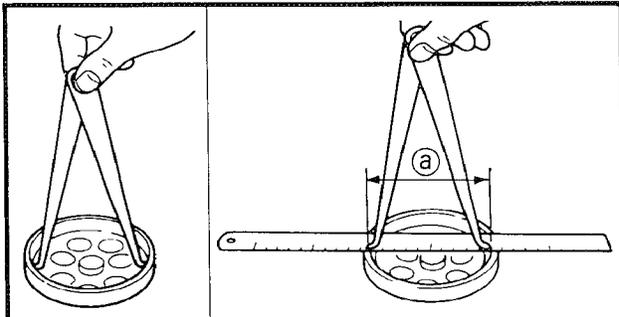
	Clutch Spring Free Length:
	109.6 mm (4.31 in)
	<Limit> 94.0 mm (3.70 in)

4. Inspect:

- Clutch housing inner surface
Oil/Scratches → Remove.



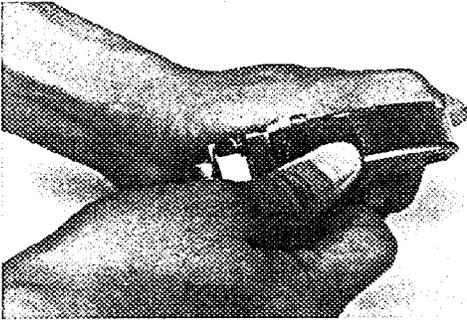
Oil	Use a rag soaked in lacquer thinner or solvent.
Scratches	Use an emery cloth (lightly and evenly polishing).



5. Measure:

- Clutch housing inside diameter (a)
Out of specification → Replace.

	Clutch Housing Inside Diameter:
	105.0 mm (4.13 in)
	<Wear Limit> 105.4 mm (4.15 in)



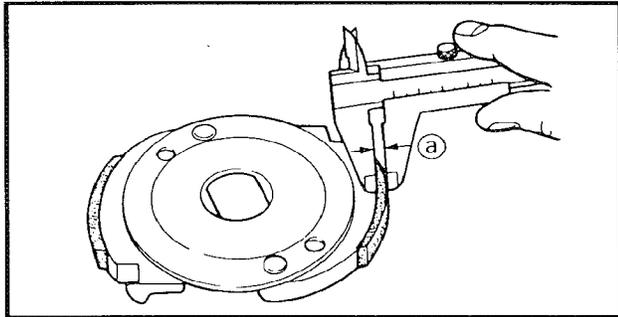
6. Inspect:

- Clutch shoes

Glazed parts → Sand with coarse sandpaper.

NOTE:

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



7. Measure:

- Clutch shoe thickness (a)

Out of specification → Replace.



Clutch Shoe Thickness:

2.5 mm (0.10 in)

<Wear Limit>:

2.0 mm (0.08 in)

V-BELT

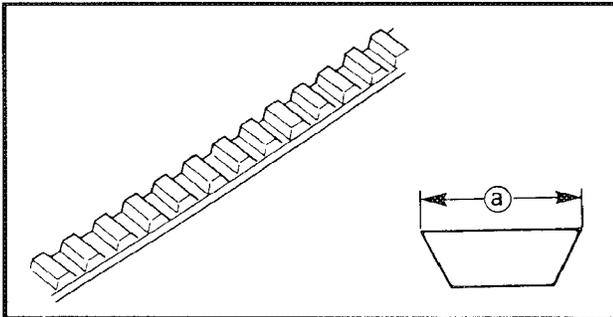
1. Inspect:

- V-belt

Crack/Wear → Replace.

NOTE:

Replace the V-belt smeared with a lot of oil or grease.



2. Measure:

- V-belt width (a)

Out of specification → Replace.



V-Belt Width:

16.6 mm (0.65 in)

<Wear Limit>:

15.2 mm (0.60 in)

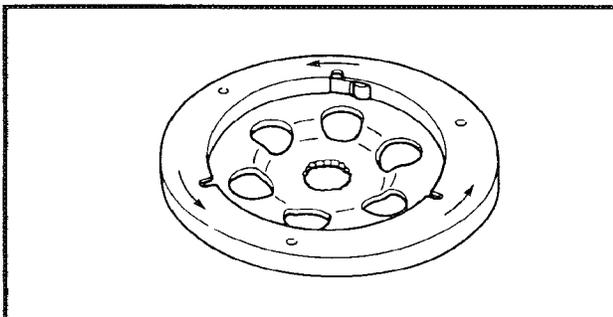
STARTER CLUTCH AND GEARS

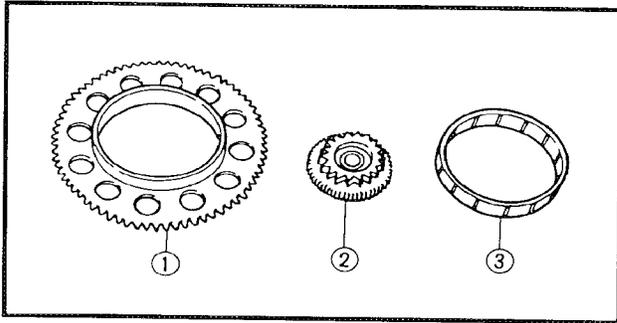
1. Inspect:

- Starter clutch

Push the dowel pin to arrow direction.

Unsmooth operation → Replace starter clutch assembly.





2. Inspect:

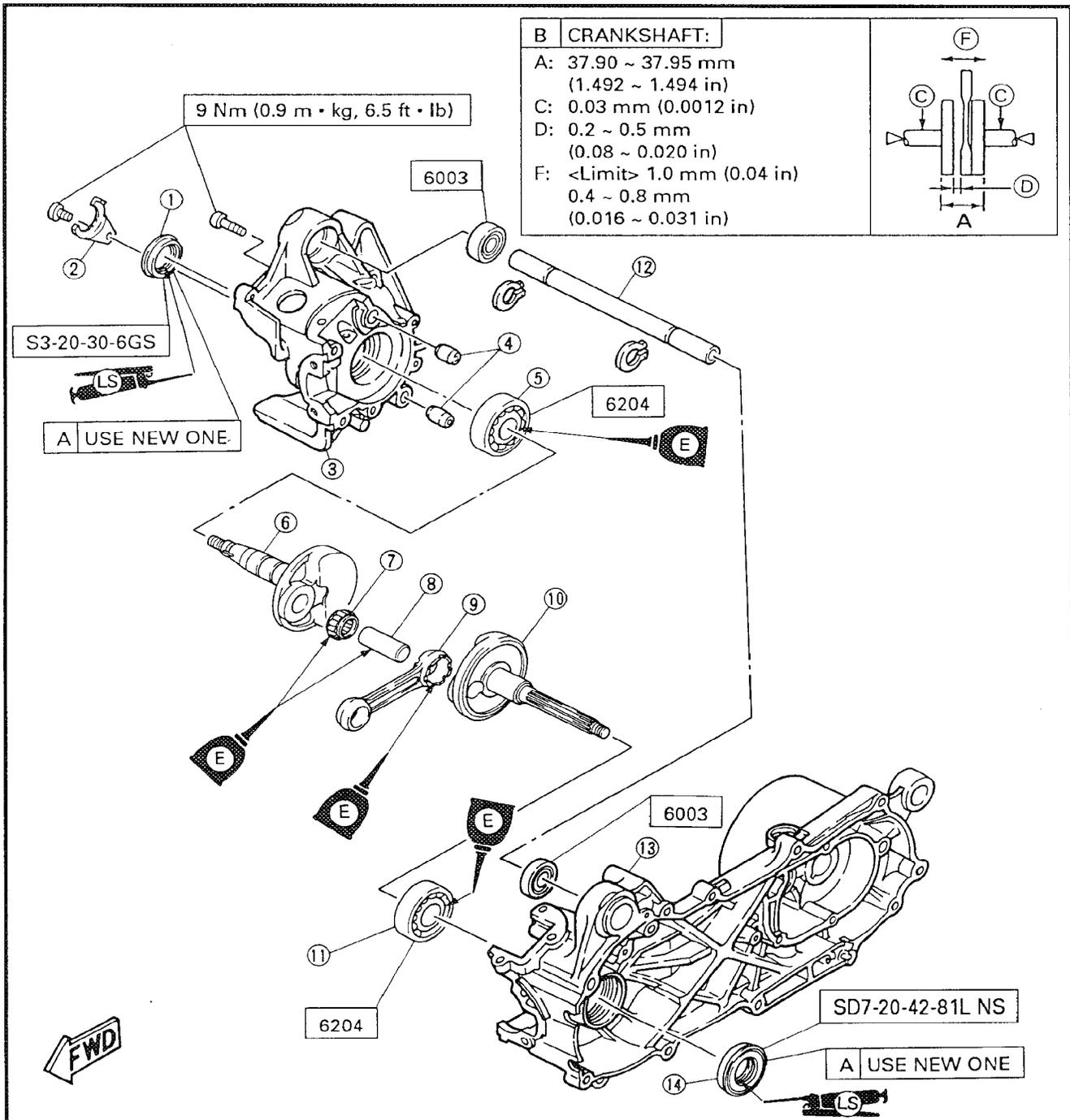
- Starter wheel gear teeth ①
- Idle gear teeth ②
- Burrs/Chips/Roughness/Wear → Replace.
- Bearing ③ (starter wheel gear)
- Pitting/Damage → Replace.



ENGINE ASSEMBLY AND ADJUSTMENT

CRANKSHAFT AND CRANKCASE

- ① Oil seal
- ② Oil seal stopper
- ③ Crankcase (right)
- ④ Dowel pin
- ⑤ Bearing
- ⑥ Crank (right)
- ⑦ Bearing
- ⑧ Crank pin
- ⑨ Connecting rod
- ⑩ Crank (left)
- ⑪ Bearing
- ⑫ Engine mount spacer
- ⑬ Crankcase (left)
- ⑭ Oil seal

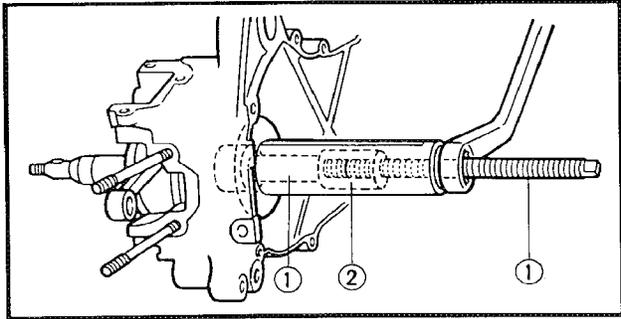




CRANKSHAFT AND CRANKCASE

CAUTION:

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



1. Attach:

- Crankshaft Installation set



Crankshaft Installation Set:

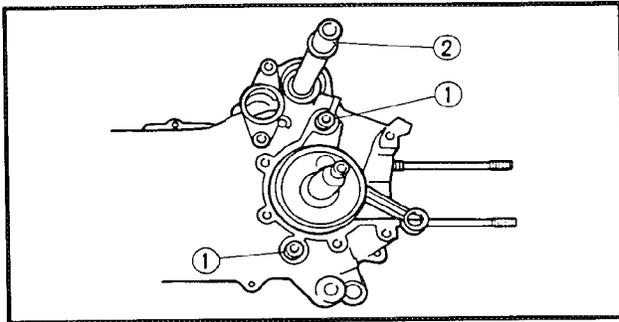
- ① : YU-90050
- ② : YM-90062

2. Install:

- Crankshaft (to left crankcase)

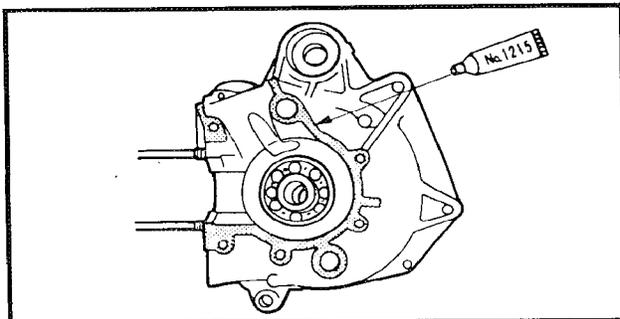
NOTE:

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



3. Install:

- Dowel pins ①
- Spacer ②

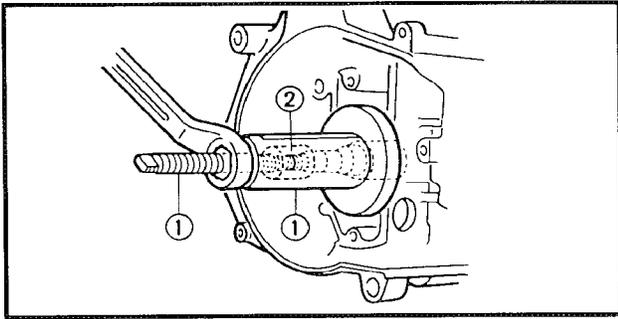


4. Apply:

- Yamaha Bond No.1215 To the mating surfaces of both case helves.



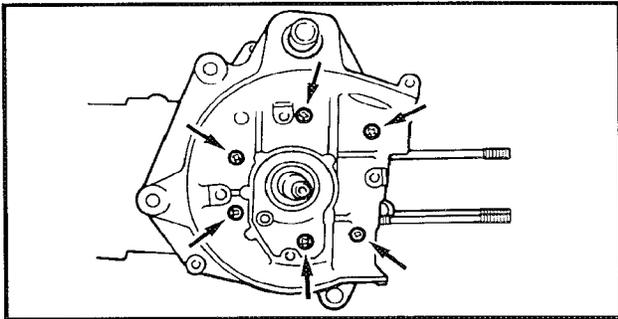
Yamaha bond No.1215:
P/N. ACC-11001-01



5. Attach:
- Crankshaft Installation Set

	Crankshaft Installation Set:
	① : YU-90050
	② : YU-90062

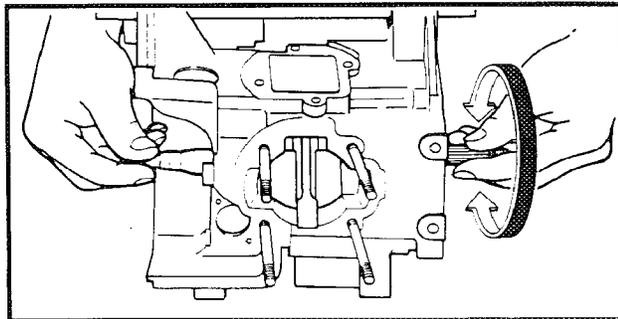
6. Install:
- Right crankcase



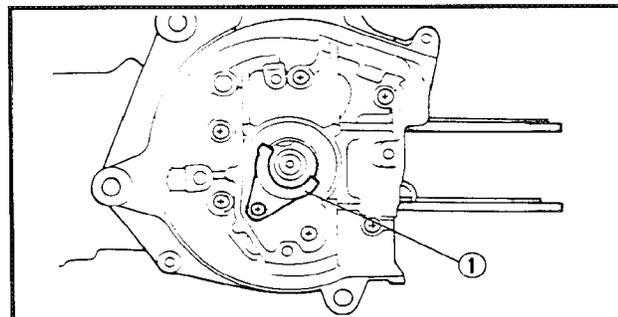
7. Tighten:
- Crankcase holding screws

NOTE: _____
Tighten the crankcase holding screws in stage, using a crisscross pattern.

	9 Nm (0.9 m • kg, 6.5 ft • lb)



8. Check:
- Crankshaft operation
 - Unsmooth operation → Repair.

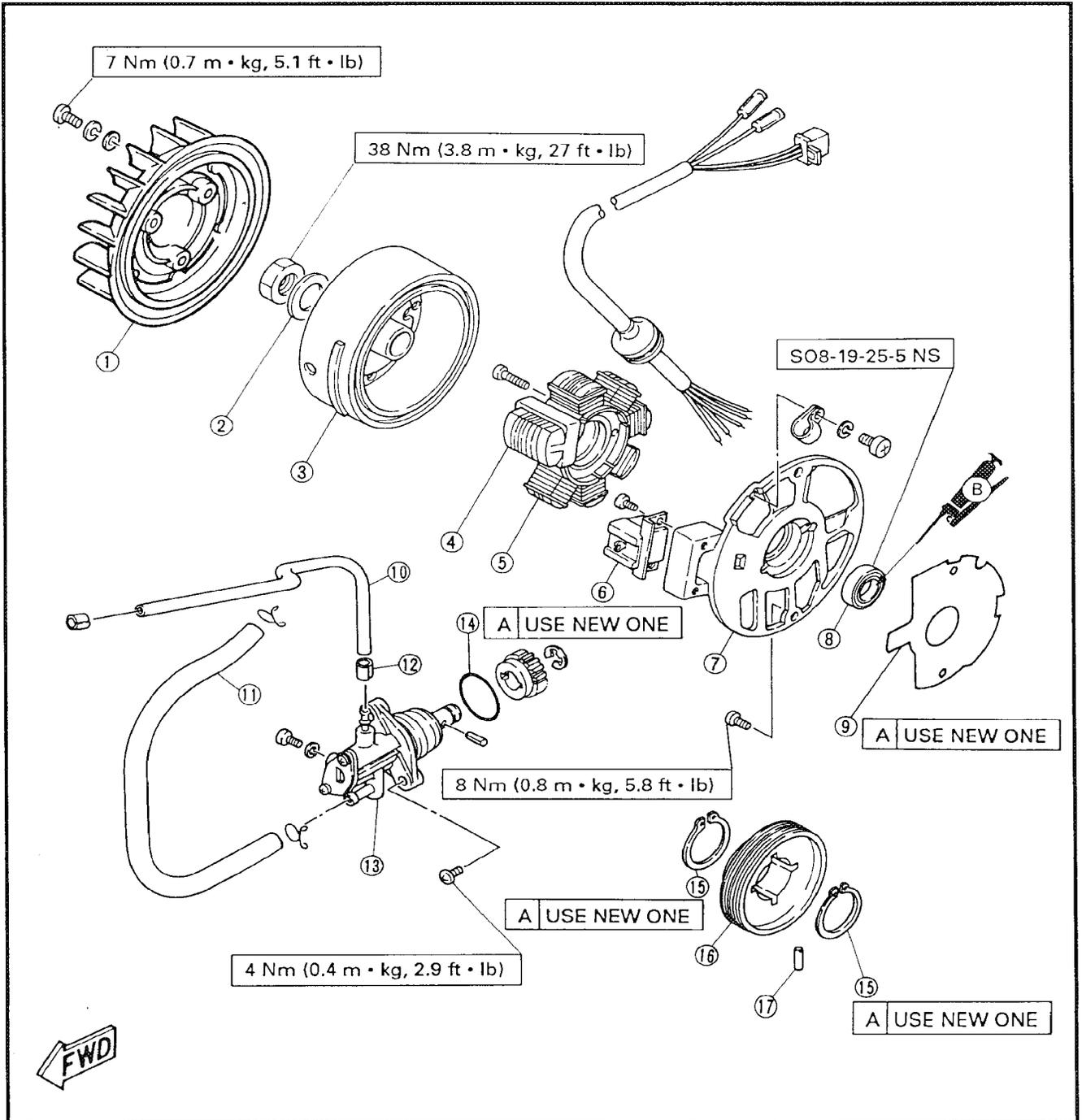


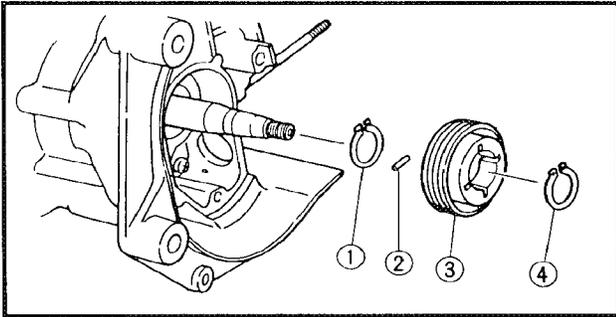
9. Install:
- Oil seal stopper plate ①

	Screw (oil seal stopper plate)
	9 Nm (0.9 m • kg, 6.5 ft • lb)

AUTOLUBE PUMP AND C.D.I. MAGNETO

- ① Fan
- ② Plain washer
- ③ Rotor assembly
- ④ Charge coil
- ⑤ Lighting coil
- ⑥ Pick up coil
- ⑦ Stator assembly
- ⑧ Oil seal
- ⑨ Gasket
- ⑩ Oil delivery hose
- ⑪ Oil hose
- ⑫ Clip
- ⑬ Autolube pump
- ⑭ O-ring
- ⑮ Circlip
- ⑯ Oil pump drive gear
- ⑰ Pin





AUTOLUBE PUMP

1. Install:

- Circlip ①
- Pin ②
- Pump drive gear ③
- Circlip ④

2. Apply:

- Lithium soap base grease (to O-ring ②)

3. Install:

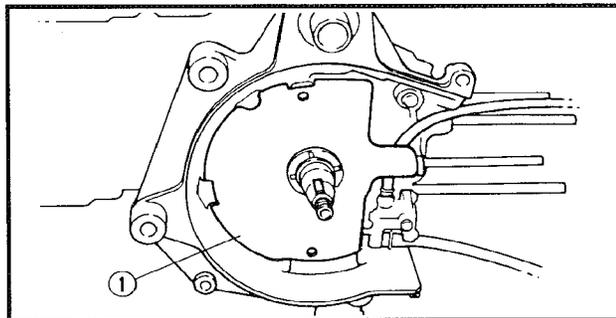
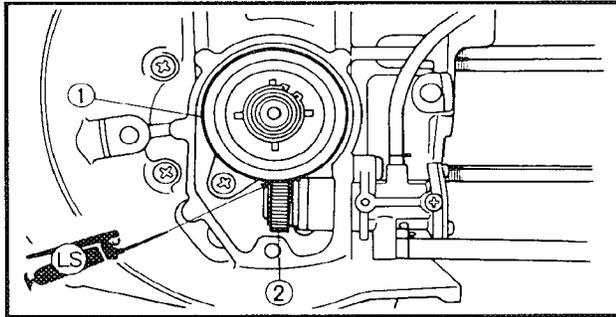
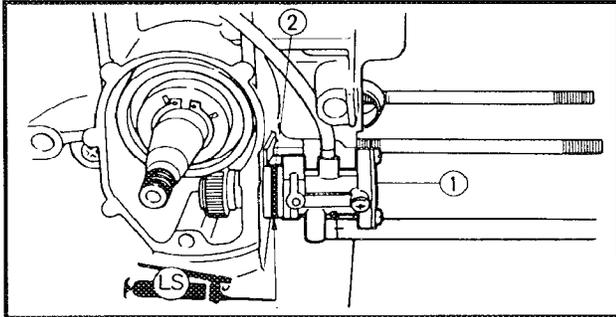
- Autolube pump ①

 **Screw (autolube pump):**
4 Nm (0.4 m • kg, 2.9 ft • lb)

4. Apply:

- Lithium soap base grease (to autolube pump gear ① , ②)

 15 cc (0.92 cu • in)



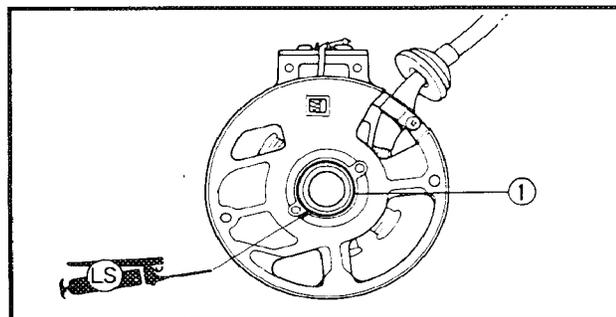
C.D.I. MAGNETO

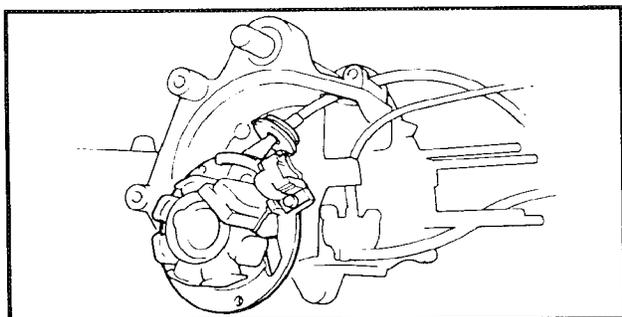
1. Install:

- Gasket ①

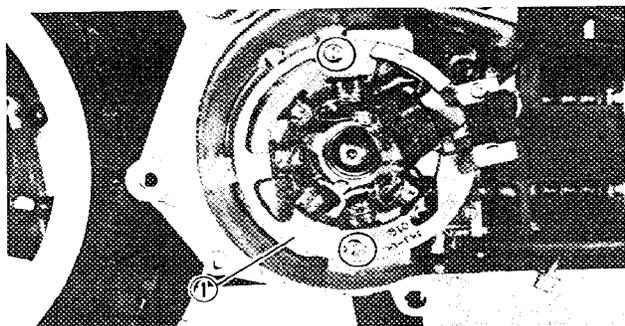
2. Apply:

- Lithium soap base grease (to oil seal ①)





3. Pass the C.D.I. magneto lead through the crankcase hole.



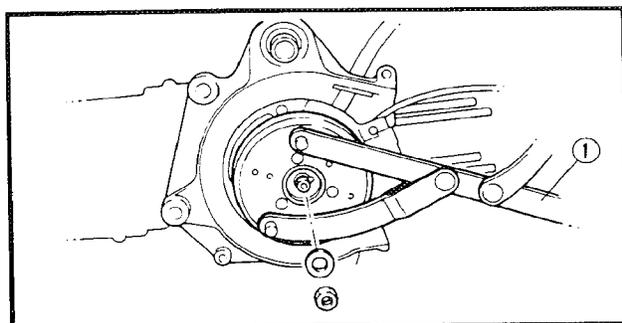
4. Install:
 • Stator assembly ①



Screw (stator assembly):
 8 Nm (0.8 m·kg, 5.8 ft·lb)

5. Install:
 • Woodruff key
 • C.D.I. magneto
 • Plain washer
 • Nut

NOTE: _____
 When installing the C.D.I. magneto, make sure the woodruff key is properly seated in the key way of the crankshaft. Apply a light coating of lithium soap base grease to the tapered portion of the crankshaft end.



6. Tighten:
 • Nut (C.D.I. magneto)
 Use Flywheel Holding Tool ①.



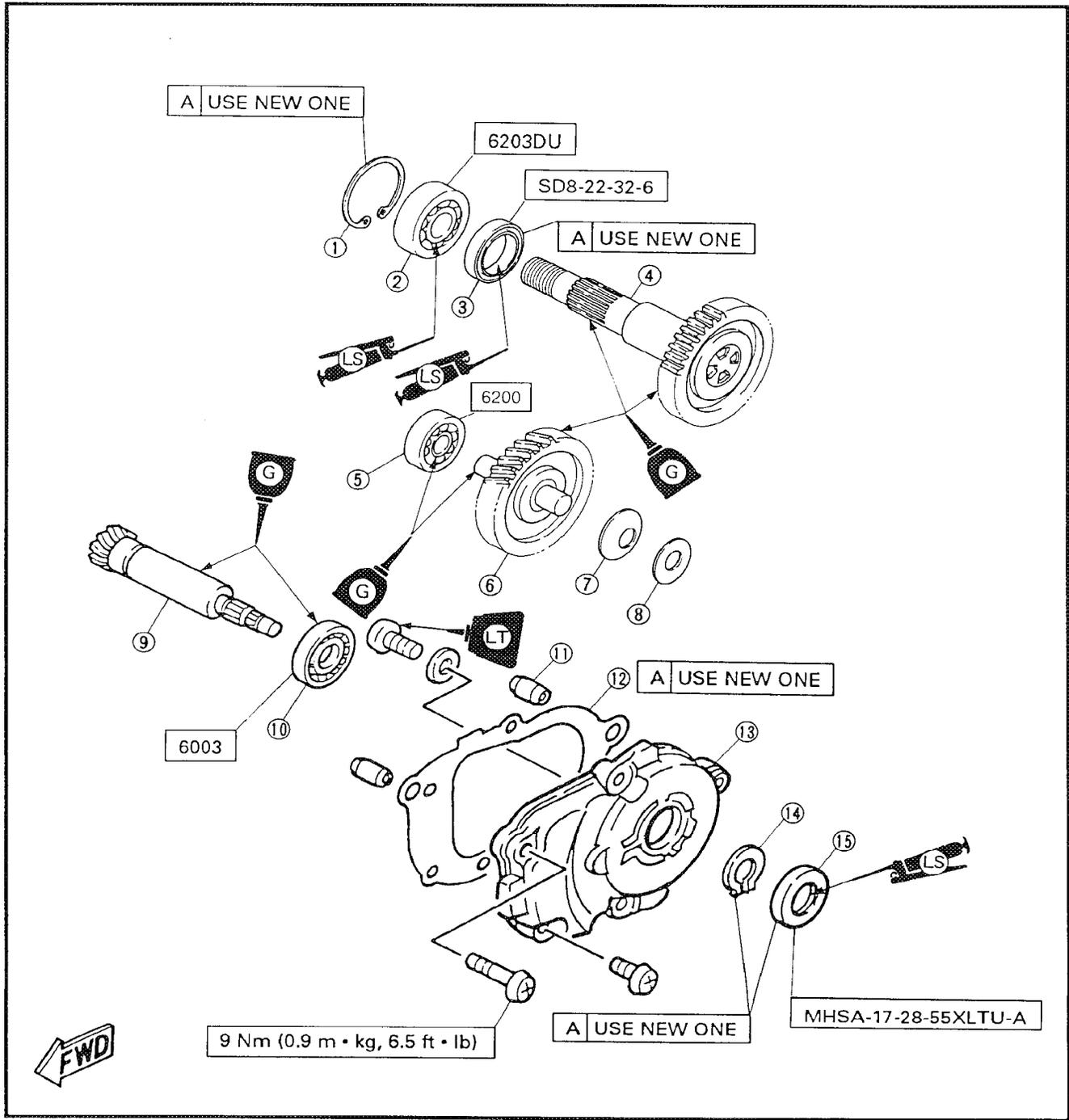
Flywheel holding tool:
 YU-01235

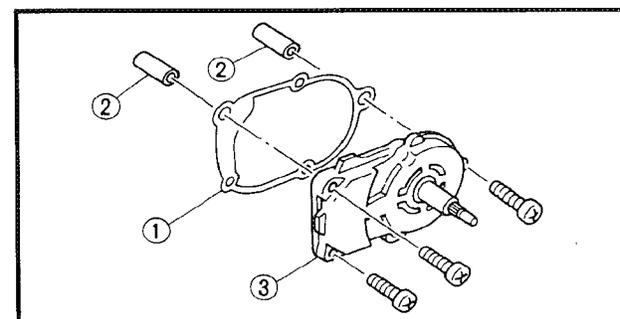
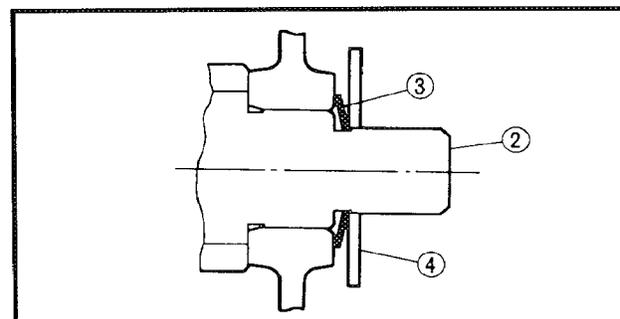
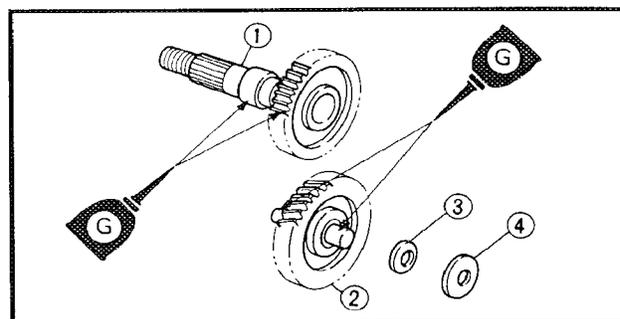
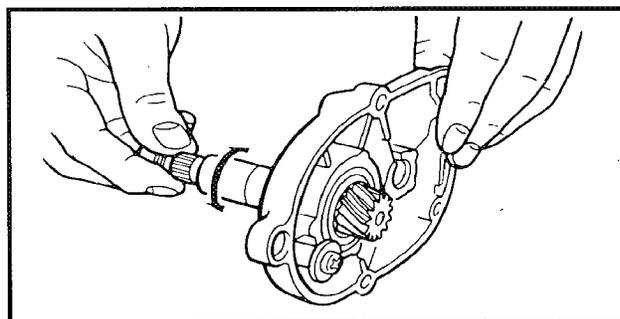
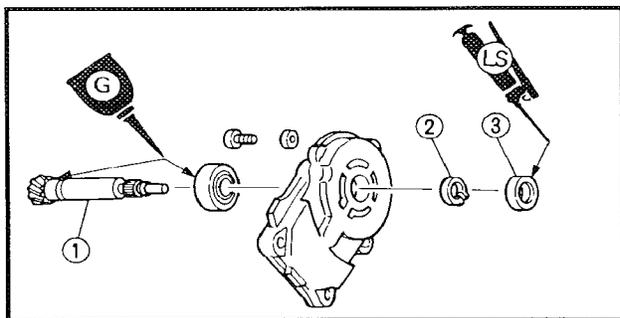


38 Nm (3.8 m · kg, 27 ft · lb)

TRANSMISSION

- ① Circlip
- ② Bearing
- ③ Oil seal
- ④ Drive axle
- ⑤ Bearing
- ⑥ Main axle
- ⑦ Conical spring washer
- ⑧ Plain washer
- ⑨ Secondary sheave axle
- ⑩ Bearing
- ⑪ Dowel pin
- ⑫ Gasket
- ⑬ Transmission case cover
- ⑭ Circlip
- ⑮ Oil seal





TRANSMISSION

1. Apply:
 - 10W30 Type SE Motor oil
(to transmission case cover bearing)
2. Install:
 - Secondary sheave axle ①
(to transmission case cover)
3. Install:
 - Circlip ②
 - Oil seal ③

NOTE: _____
 Apply lithium soap base grease onto the oil seal lips.

4. Check:
 - Secondary sheave axle operation
Unsmooth operation → Repair.
5. Apply:
 - 10W30 type SE Motor oil
(to main axle bearing and drive axle bearing)
6. Install:
 - Drive axle ①
 - Main axle ②
 - Conical spring washer ③
 - Plain washer ④

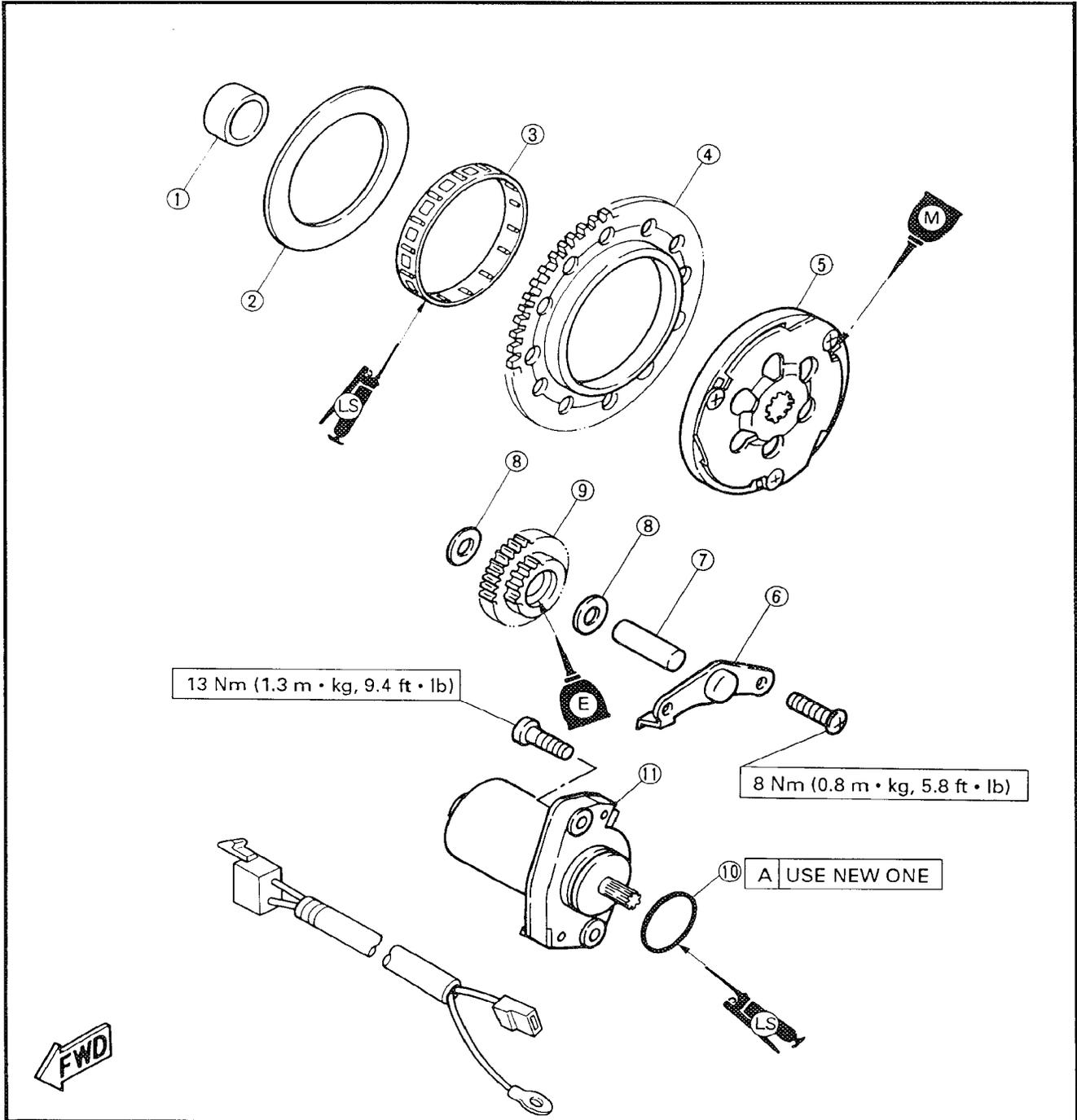
7. Install:
 - Gasket ①
 - Dowel pins ②
 - Transmission case cover ③

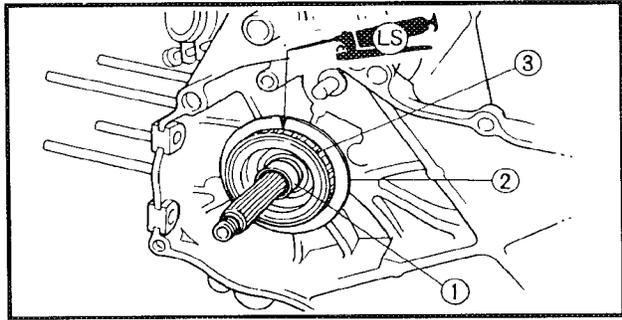
 **Screw (case cover):**
 9 Nm (0.9 m · kg, 6.5 ft · lb)



STARTER SYSTEM

- ① Collar
- ② Plain washer
- ③ Bearing
- ④ Starter wheel gear
- ⑤ Starter clutch
- ⑥ Plate
- ⑦ Shaft
- ⑧ Plain washer
- ⑨ Idle gear
- ⑩ O-ring
- ⑪ Starter motor



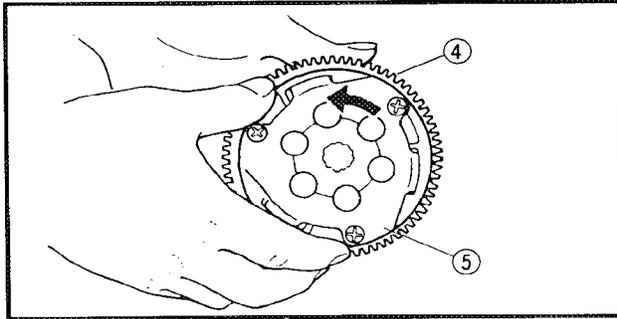


STARTER SYSTEM

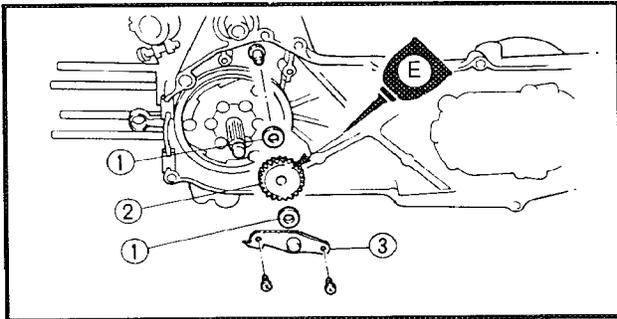
1. Install:
- Collar ①
 - Plain washer ②
 - Bearing ③
 - Starter wheel gear ④
 - Starter clutch ⑤

NOTE: _____

- Apply lithium soap base grease to the bearing ③ .
- Apply molybdenum disulfide oil to the pin (starter clutch) ⑤ .



2. Install:
- Plain washer ①
 - Idle gear ②
 - Plain washer ①
 - Plate ③ (idle gear)



	<p>Screw (idle gear plate): 8 Nm (0.8 m • kg, 5.8 ft • lb)</p>
---	---

NOTE: _____

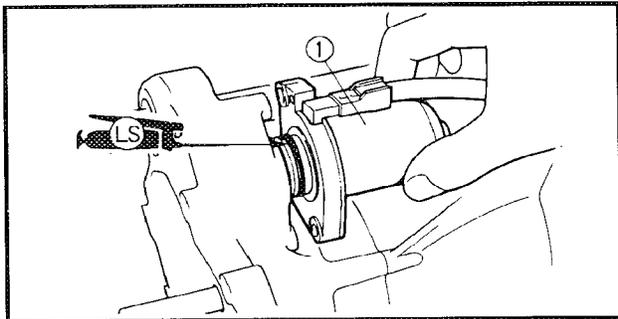
Apply engine oil to the idle gear ② .

3. Install:
- Starter motor ①

	<p>13 Nm (1.3 m • kg, 9.4 ft • lb)</p>
---	---

NOTE: _____

Apply lithium soap base grease to the O-ring of the starter motor.

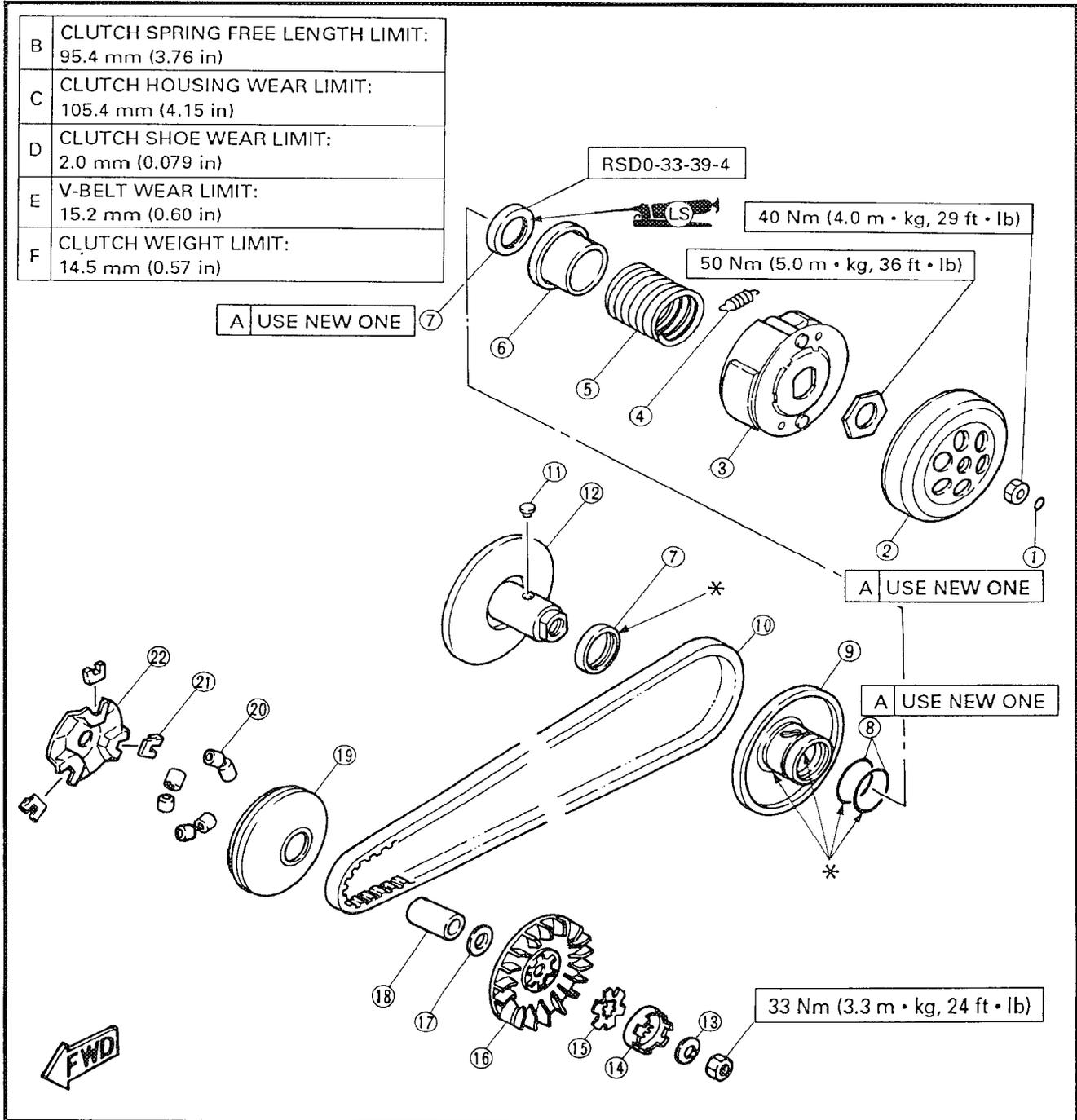




PRIMARY AND SECONDARY SHEAVE

- | | | |
|------------------|----------------------------|--------------------------|
| ① O-ring | ⑨ Secondary sliding sheave | ⑰ Shim |
| ② Clutch housing | ⑩ V-belt | ⑱ Collar |
| ③ Clutch carrier | ⑪ Guide pin | ⑲ Primary sliding sheave |
| ④ Weight spring | ⑫ Secondary fixed sheave | ⑳ Clutch weight |
| ⑤ Clutch spring | ⑬ Conical spring washer | ㉑ Slider |
| ⑥ Spring seat | ⑭ One-way clutch | ㉒ Cam |
| ⑦ Oil seal | ⑮ Washer | |
| ⑧ O-ring | ⑯ Primary fixed sheave | |

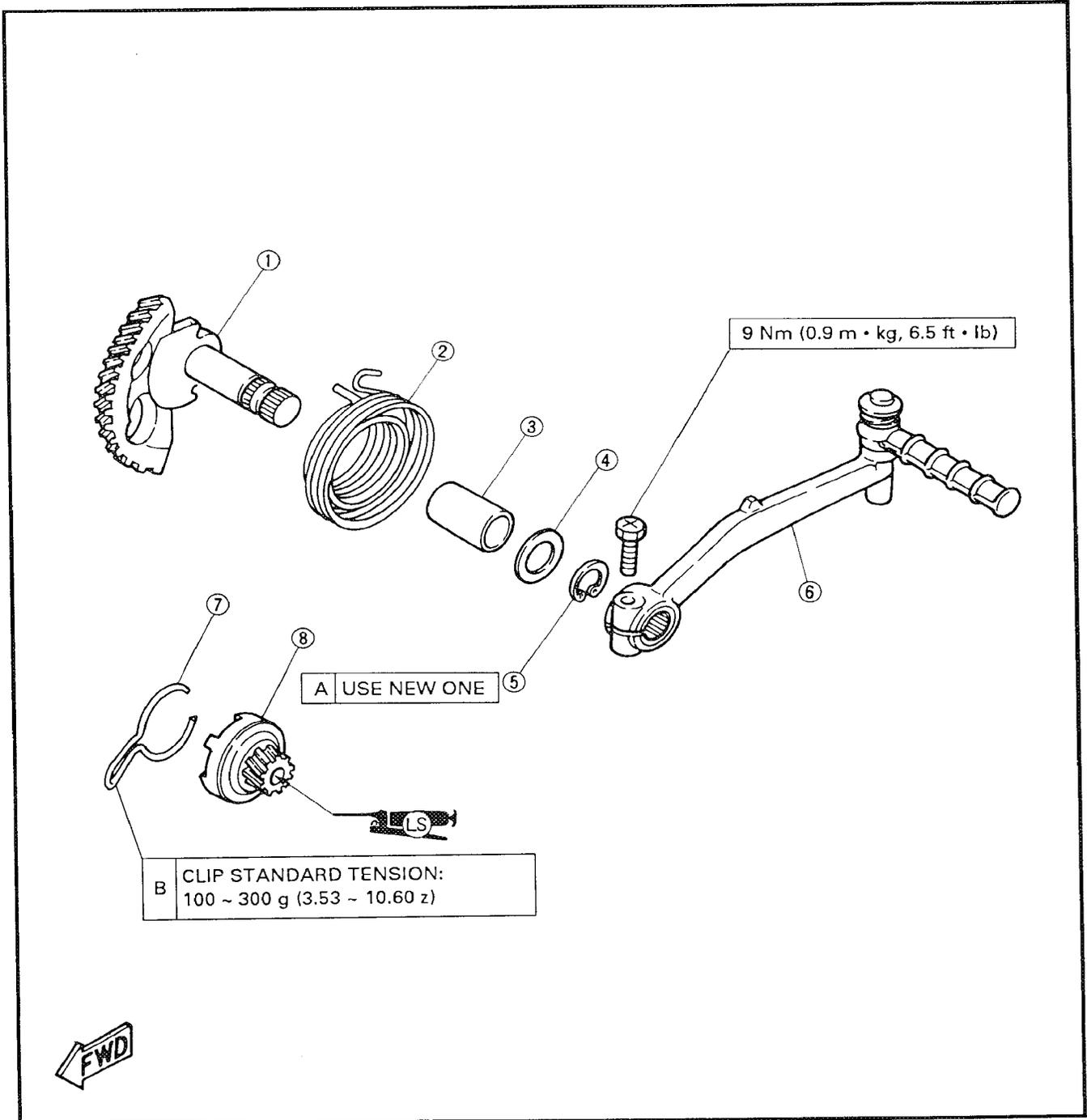
* : Apply BEL-RAY Assembly lube[®]

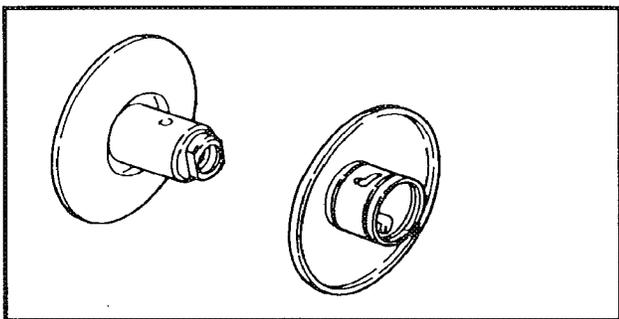




KICK STARTER

- ① Kick shaft
- ② Return spring
- ③ Collar
- ④ Plain washer
- ⑤ Circlip
- ⑥ Kick crank
- ⑦ Clip
- ⑧ Kick pinion gear

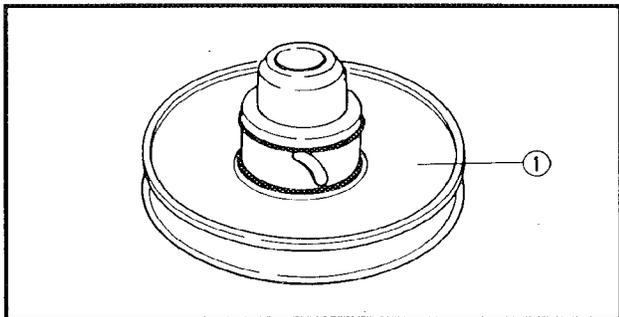




SECONDARY SHEAVE

When assembling the secondary sheave, reverse the disassembly procedure. Note the following points.

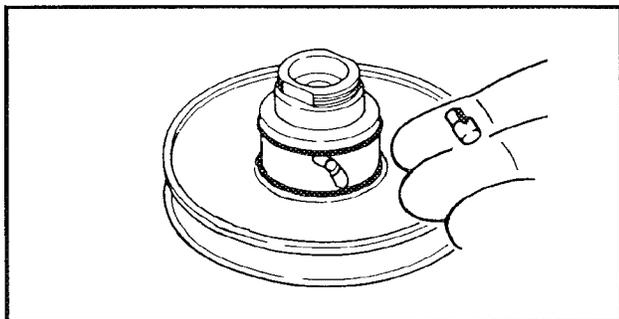
1. Apply:
 - BEL-RAY Assembly Lube®
(to the inside of the sliding/fixed sheave)



2. Install:
 - Sliding sheave ①

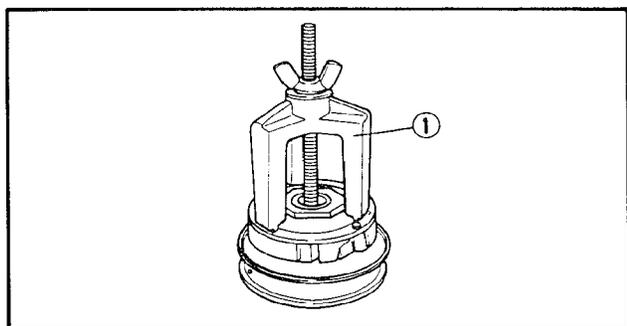
NOTE:

Be careful so that the oil seal lips are not turned over when installing the sheave.



3. Apply:
 - BEL-RAY Assembly Lube®
(to the torque cam grooves and O-rings)

4. Check:
 - Sliding sheave
Unsmooth operation → Repair.

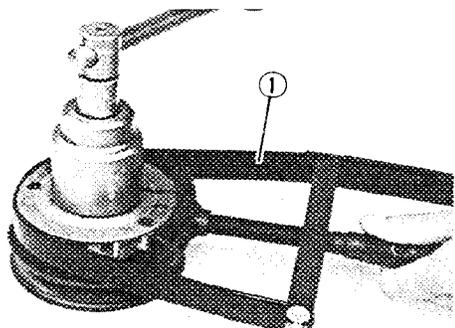


5. Install:
 - Clutch securing nut
Use Clutch Spring Holder ①



Clutch Spring Holder:
YS-28891

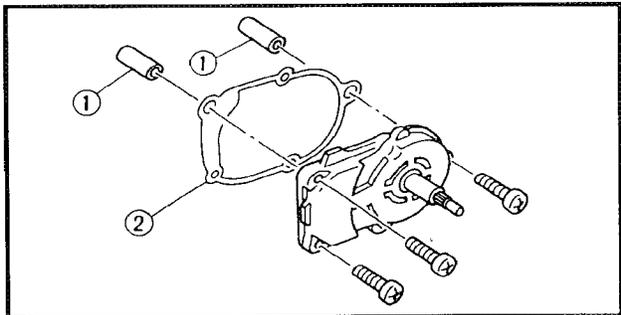
6. Tighten:
 - Clutch securing nut
Use Sheave Holder ①
Wrench (41MM).



Sheave holder:
YS-01880

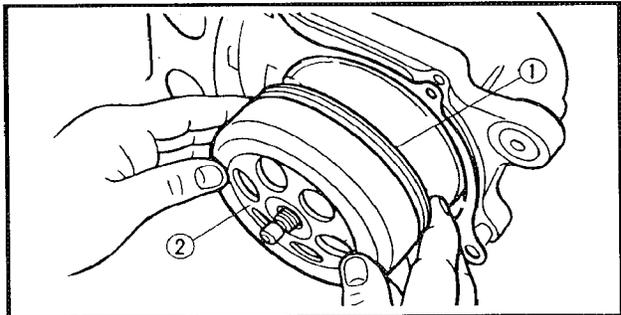


50 Nm (5.0 m • kg, 36 ft • lb)



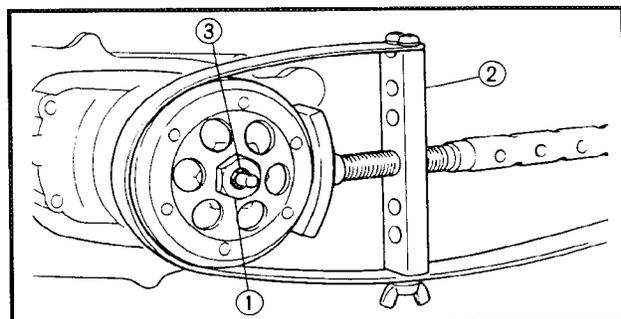
7. Install:

- Dowel pin ①
- Crankcase cover gasket ②



8. Install:

- Secondary sheave assembly ①
- Clutch housing ②

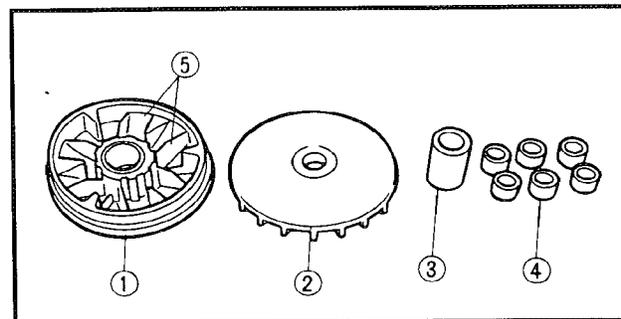


9. Tighten:

- Nut ① (secondary sheave)
- Use Sheave Holder ②

	Sheave Holder: YS-01880
--	-----------------------------------

	40 Nm (4.0 m • kg, 29 ft • lb)
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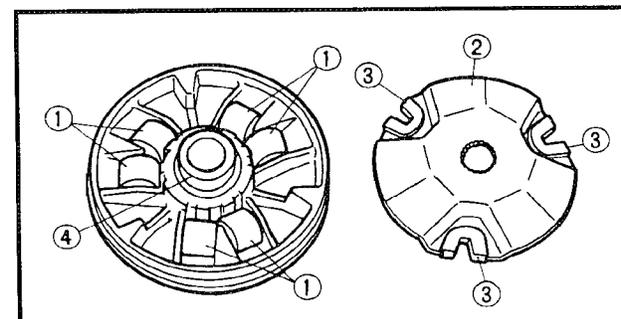
10. Install:

- O-ring ③

PRIMARY SHEAVE

1. Clean:

- Primary sliding sheave face ①
- Primary fixed sheave face ②
- Collar ③
- Weight ④
- Primary sliding sheave cam surface ⑤

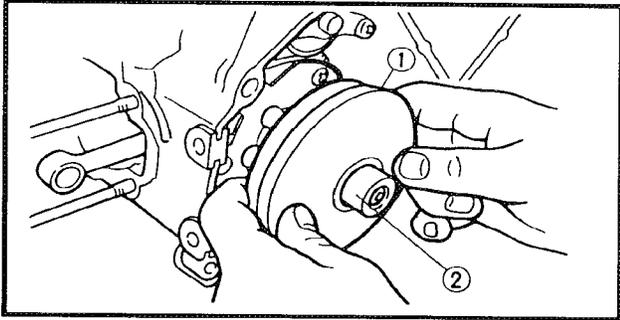


2. Install:

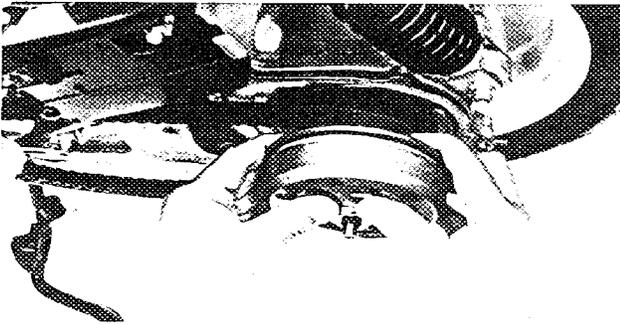
- Weight ①
- Cam ②
- Slider ③
- Collar ④

3. Check:

- Cam operation
- Not smooth → Repair.

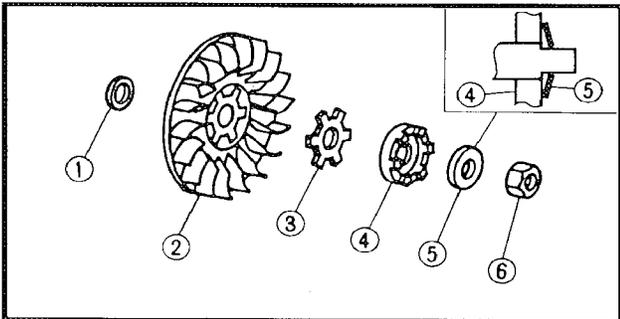


4. Install:
- Primary sheave assembly ①
 - Collar ②

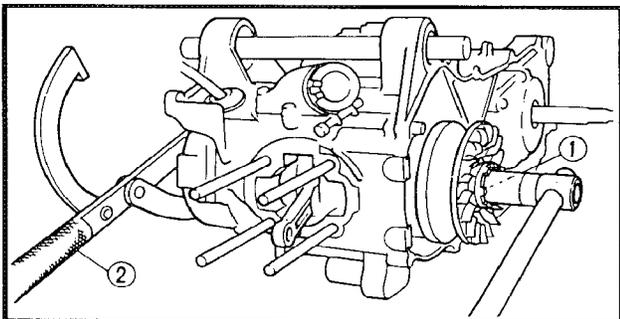


5. Install:
- V-belt
- Place the V-belt around the secondary sheave, and compress the secondary sheave spring hard so that the V-belt moves toward the clutch hub.

NOTE: _____
 The V-belt must be installed with the arrow frontward.



6. Install:
- Shim ①
 - Primary fixed sheave ②
 - Washer ③
 - One-way clutch ④
 - Conical spring washer ⑤
 - Nut ⑥

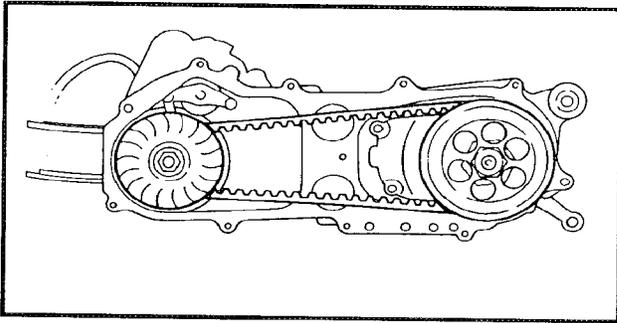


7. Tighten:
- Nut ① (primary sheave)

 **33 Nm (3.3 m • kg, 24 ft • lb)**

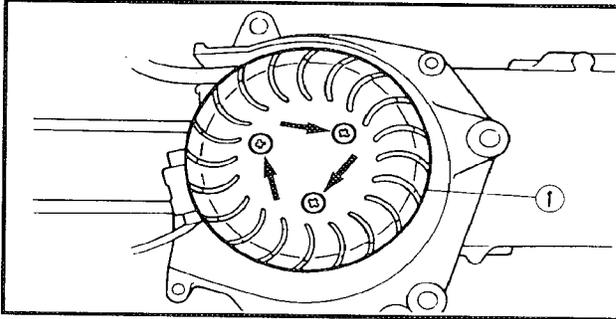
NOTE: _____
 When tightening the nut (primary sheave), hold the C.D.I. magneto using Flywheel Holding Tool ②.

 **Flywheel Holding Tool:
 YU-01235**



8. Adjust:
- V-belt

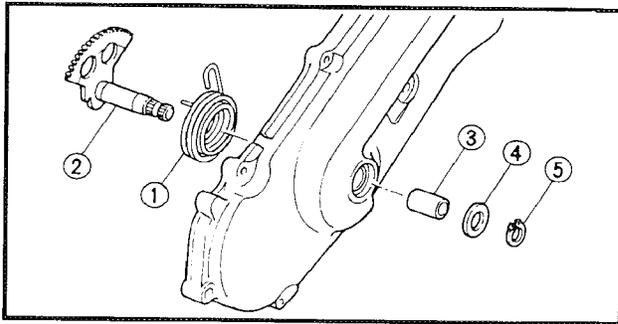
Tense the V-belt by turning the primary sheave several times.



9. Install:
- Fan ①

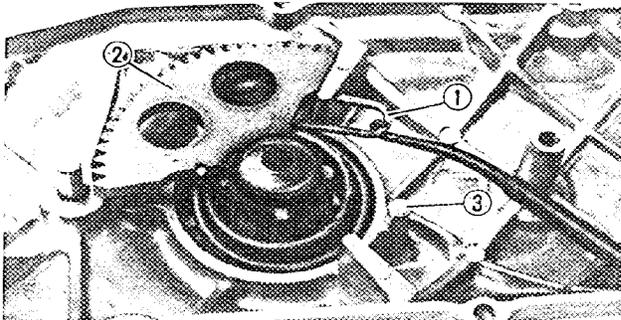


Screw (fan):
7 Nm (0.7 m • kg, 5.1 ft • lb)

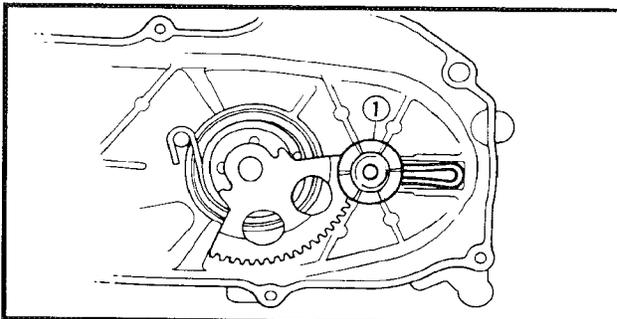


KICK STARTER

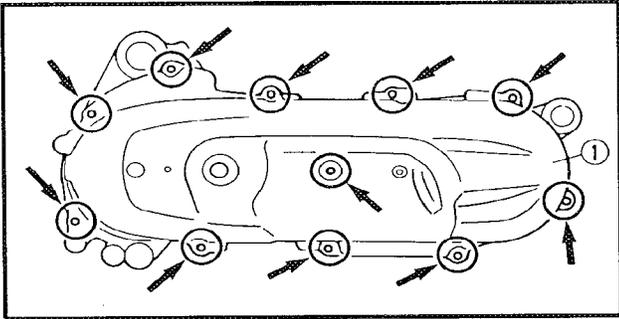
1. Install:
- Return spring ①
 - Kick shaft ②
 - Collar ③
 - Plain washer ④
 - Circlip ⑤



2. Hook:
- Return spring ①
(to the kick gear ② and boss ③)



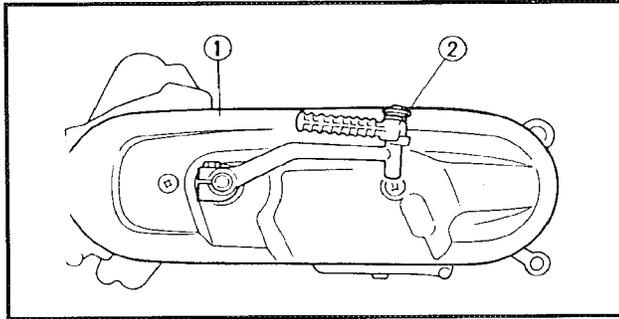
3. Install:
- Kick pinion gear ①



4. Install:

- Crankcase cover ①

	<p>Screw (crankcase cover) 9 Nm (0.9 m · kg, 6.5 ft · lb)</p>
---	---



5. Install:

- Cover ①
- Kick crank ②

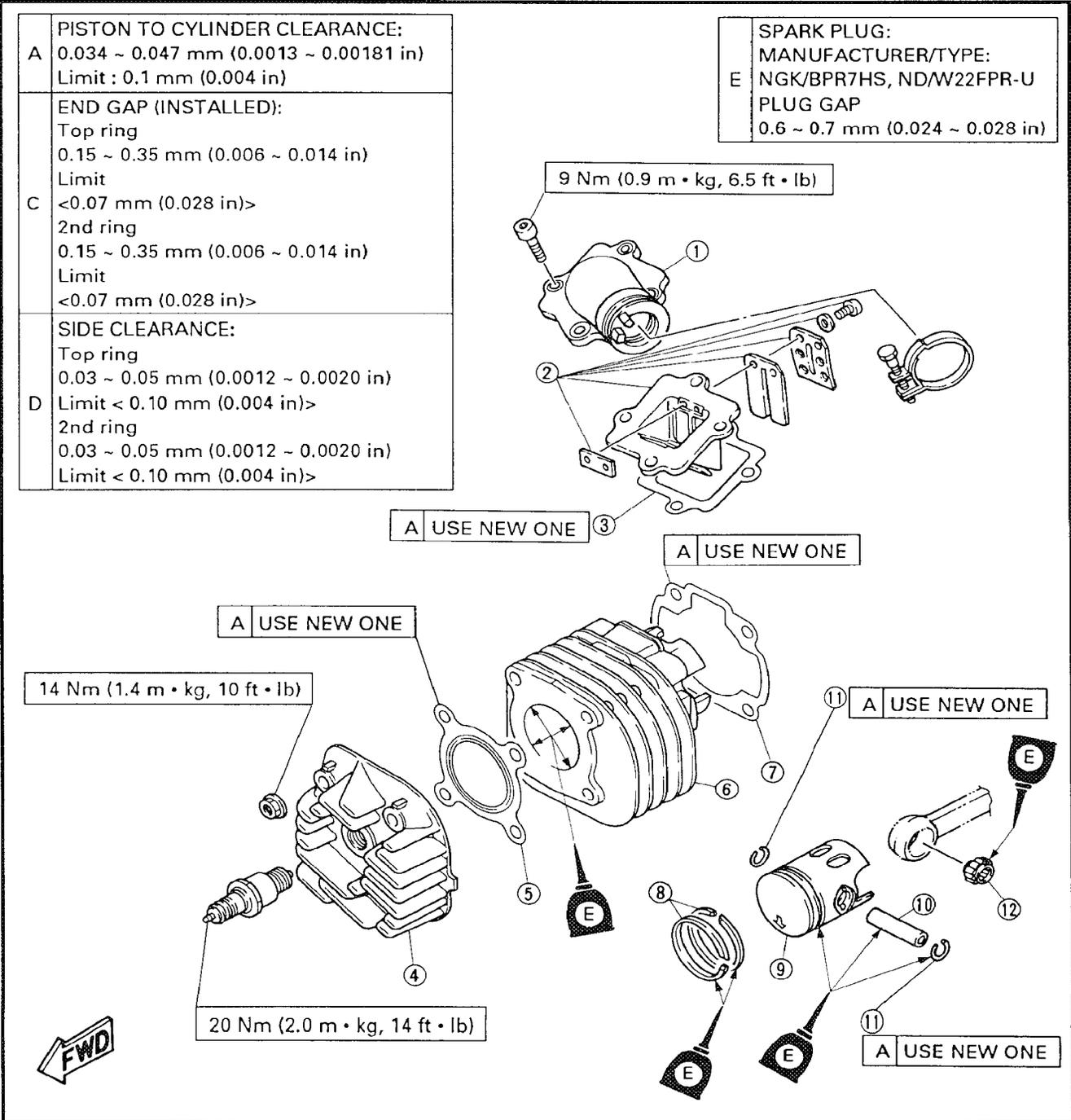
	<p>Screw (cover) 7 Nm (0.7 m · kg, 5.1 ft · lb)</p>
	<p>Kick crank 9 Nm (0.9 m · kg, 6.5 ft · lb)</p>

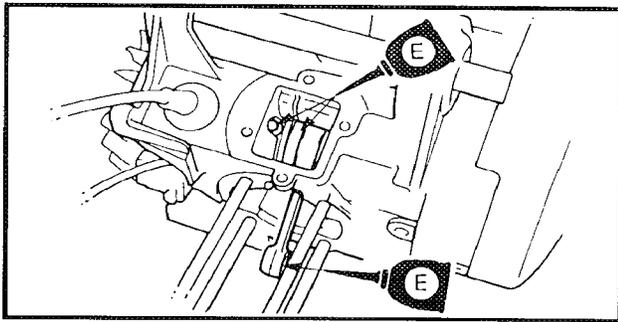
PISTON, CYLINDER AND CYLINDER HEAD

- ① Carburetor joint
- ② Reed valve
- ③ Gasket
- ④ Cylinder head
- ⑤ Cylinder head gasket
- ⑥ Cylinder
- ⑦ Cylinder gasket
- ⑧ Piston ring
- ⑨ Piston
- ⑩ Piston pin
- ⑪ Piston pin clip
- ⑫ Bearing

A	PISTON TO CYLINDER CLEARANCE:
	0.034 ~ 0.047 mm (0.0013 ~ 0.00181 in) Limit : 0.1 mm (0.004 in)
C	END GAP (INSTALLED):
	Top ring 0.15 ~ 0.35 mm (0.006 ~ 0.014 in) Limit <0.07 mm (0.028 in)>
	2nd ring 0.15 ~ 0.35 mm (0.006 ~ 0.014 in) Limit <0.07 mm (0.028 in)>
D	SIDE CLEARANCE:
	Top ring 0.03 ~ 0.05 mm (0.0012 ~ 0.0020 in) Limit < 0.10 mm (0.004 in)>
	2nd ring 0.03 ~ 0.05 mm (0.0012 ~ 0.0020 in) Limit < 0.10 mm (0.004 in)>

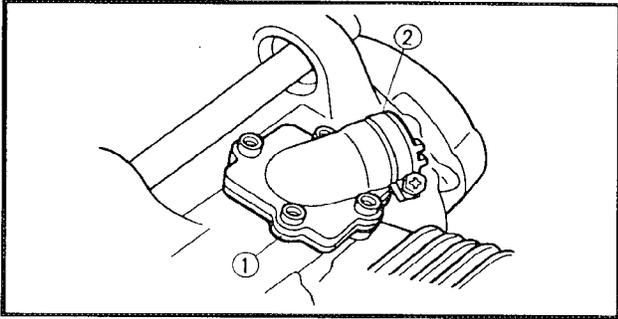
SPARK PLUG:
MANUFACTURER/TYPE:
E NGK/BPR7HS, ND/W22FPR-U
PLUG GAP
 0.6 ~ 0.7 mm (0.024 ~ 0.028 in)





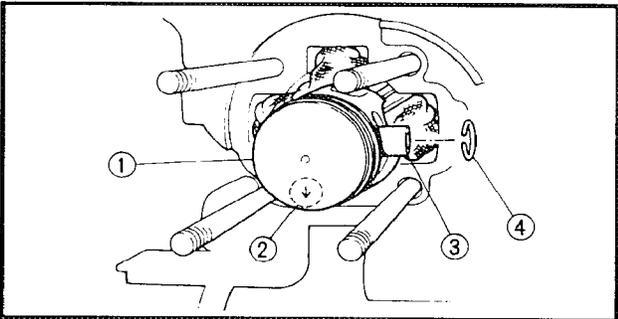
PISTON PIN AND PISTON

1. Apply:
 - Engine oil
(to the crankshaft bearing, connecting rod big end bearing, small end bearing, piston pin, piston ring grooves and piston skirt areas.)



2. Install:
 - Reed valve gasket
 - Reed valve ①
 - Carburetor joint ②

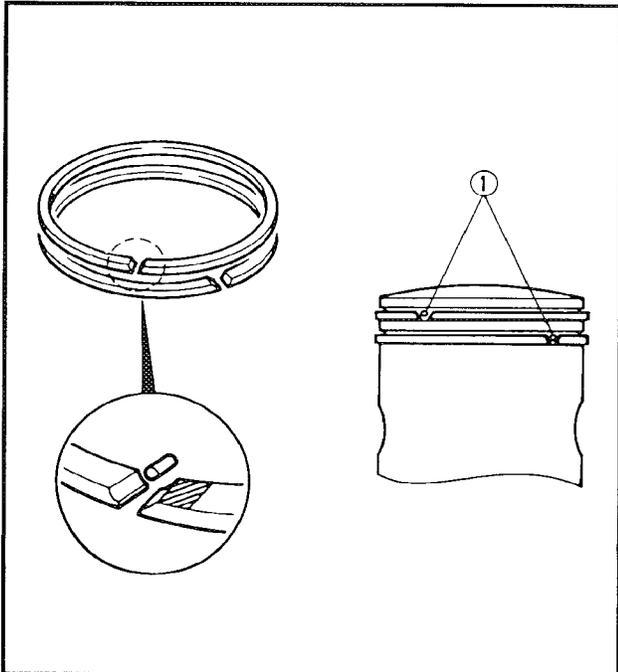
	<p>Carburetor joint 9 Nm (0.9 m · kg, 6.5 ft · lb)</p>
---	---



3. Install:
 - Small end bearing
 - Piston ①
 - Piston pin ③
 - Piston pin clip ④

NOTE: _____

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



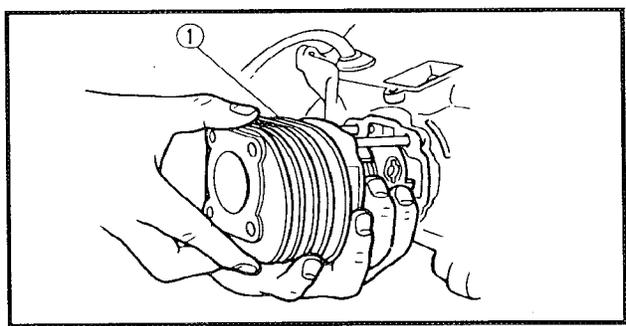
CYLINDER AND CYLINDER HEAD

1. Install:
 - Cylinder gasket (new gasket)
2. Check:
 - Piston rings

NOTE: _____

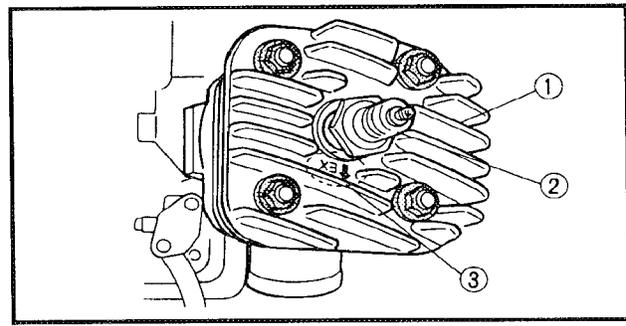
Make sure the ring ends ① are properly fitted around the ring locating pins in the piston grooves.

- Be sure to check the manufacturer's marks or numbers stamped on the rings are on the top side of the rings.



3. Install:
- Cylinder ①

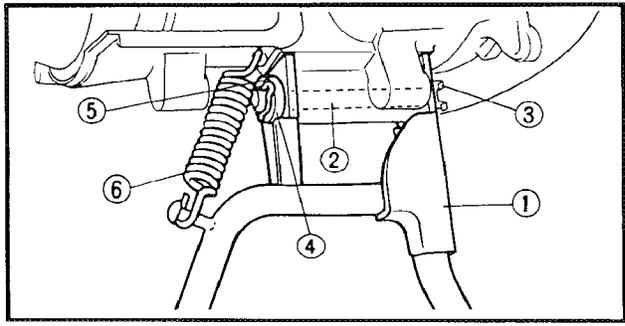
NOTE: _____
 Install the cylinder with one hand while compressing the piston rings with the other hand.



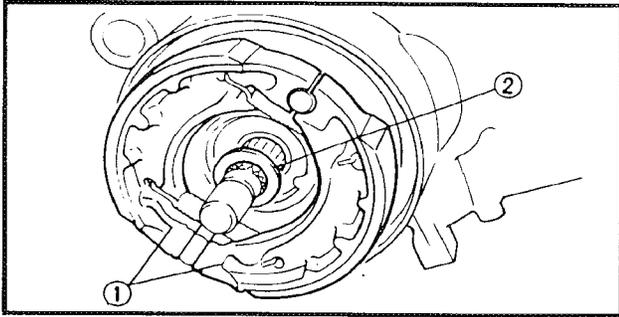
4. Install:
- Cylinder head gasket (new gasket)
5. Install:
- Cylinder head ①
 - Spark plug ②

NOTE: _____
 • The arrow ③ "EX" on the head cylinder must point to the exhaust side.
 • Tighten the cylinder head holding nuts in stage, using a crisscross pattern.

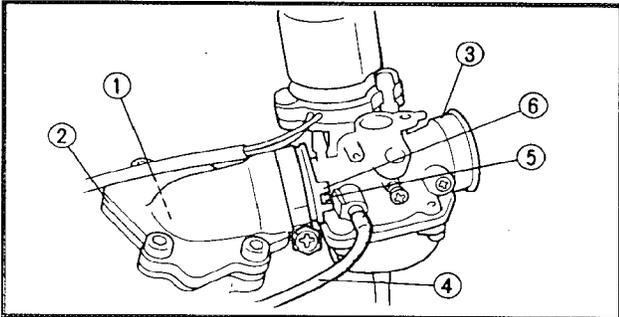
	Cylinder Head Holding Nuts:
	14 Nm (1.4 m · kg, 10 ft · lb)
	Spark Plug:
	20 Nm (2.0 m · kg, 14 ft · lb)



6. Install:
- Centerstand ①
 - Shaft ②
 - Cramp ③
 - Rubber washer ④
 - Clip ⑤
 - Spring ⑥



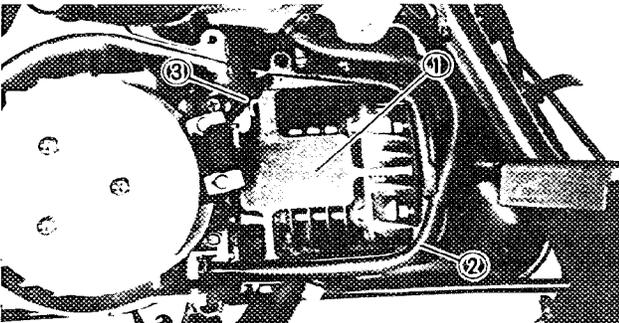
7. Install:
- Brake shoe plate ①
 - Plain washer ②
 - Rear wheel



8. Install:
- Reed valve ass'y ①
 - Gasket ②
 - Carburetor ③
 - Oil delivery hose ④
 - Air cleaner case assembly

NOTE:

- Align the projection ⑤ with the projections ⑥.
- Before installing the oil delivery hose, fill the engine oil in it.

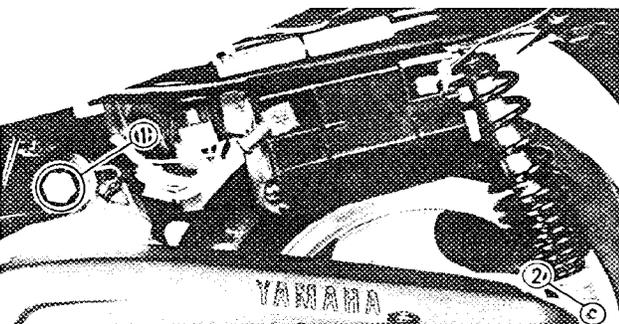


9. Install:
- Air shroud ①
 - Oil hose ②
 - Oil delivery hose ③

NOTE:

Pass the oil delivery hose and oil hose as shown.

10. Air bleeding:
- Autolube pump
Refer to "CHAPTER 3 – AUTOLUBE PUMP AIR BLEEDING" section.



REMounting ENGINE

When remounting the engine, reverse the removal procedure.

1. Install:
- Engine mounting bolt ①
 - Rear shock absorber bolt ② (lower)
These bolts should be temporarily secured.
2. Tighten:
- Engine mounting bolt
 - Rear shock absorber bolt (lower)



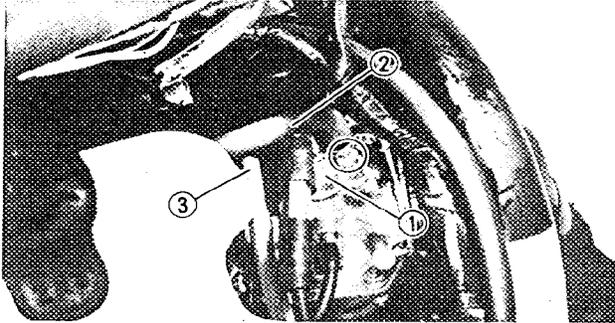
Engine mounting bolt:
84 Nm (8.4 m • kg, 61 ft • lb)
Rear shock absorber bolt (lower):
32 Nm (3.2 m • kg, 23 ft • lb)

3. Install:

- Carburetor top together with throttle valve ①
- Fuel hose ② / Vacuum pipe ③
- Brake cable/plug cap

NOTE:

When installing the throttle valve into the carburetor, align the groove of the throttle valve with the projection of the carburetor.



4. Connect:

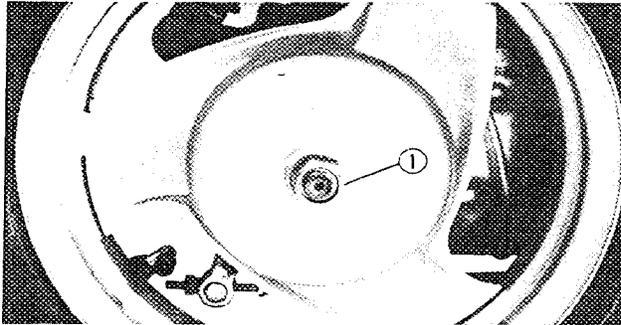
- Auto choke unit leads
- Starter motor lead
- C.D.I. magneto lead
- Earthlead

5. Tighten:

- Rear wheel axle nut ①

NOTE:

When tighten the rear wheel axle nut, apply the rear brake.



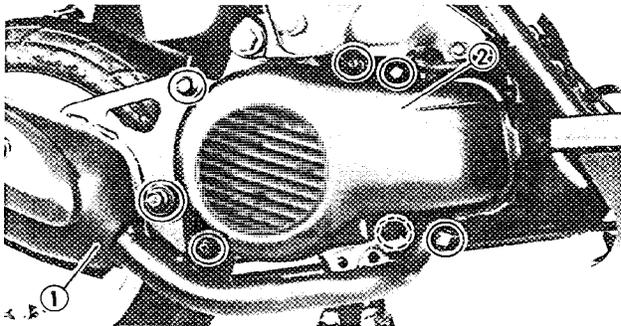
Rear wheel axle nut:
95 Nm (9.5 m • kg, 68 ft • lb)

6. Install:

- Muffler ①
- Fan cover ②



Bolt (muffler):
26 Nm (2.6 m • kg, 19 ft • lb)
Bolt (exhaust pipe):
9 Nm (0.9 m • kg, 6.5 ft • lb)



7. Apply:

- Transmission oil
Refer to "CHAPTER 3 – TRANSMISSION OIL REPLACEMENT" section.

8. Adjust:

- Brake lever free play
Refer to "CHAPTER 3 – FRONT/REAR BRAKE LEVER FREE PLAY ADJUSTMENT" section.
- Throttle cable free play
Refer to "THROTTLE CABLE FREE PLAY ADJUSTMENT" section.

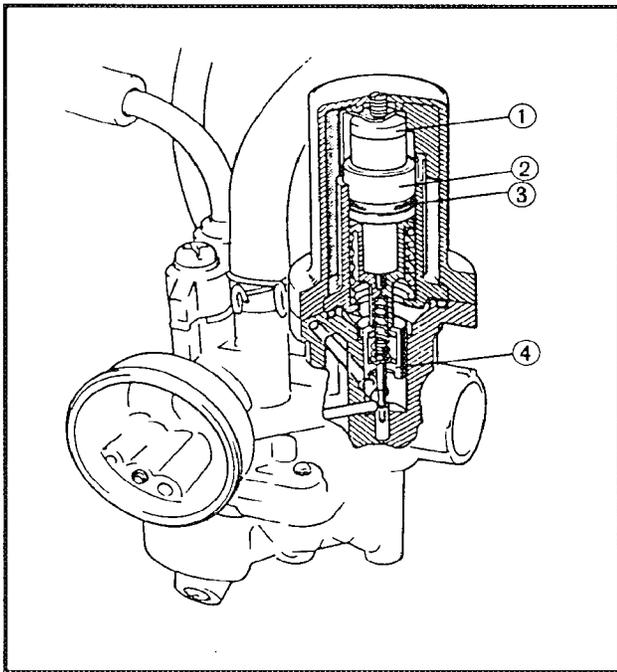
**CHAPTER 5.
CARBURETION**

AUTO CHOKE SYSTEM E-5
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 WIRING SCHEMATIC E-5
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CARBURETION

AUTO CHOKE SYSTEM

CONSTITUENTS

The electric auto-choke consists of the Positive Temperature Coefficient (P.T.C.) thermistor, wax element and starter plunger.

- ① P.T.C. thermistor
- ② Wax element
- ③ O-ring
- ④ Starter plunger

P.T.C. thermistor

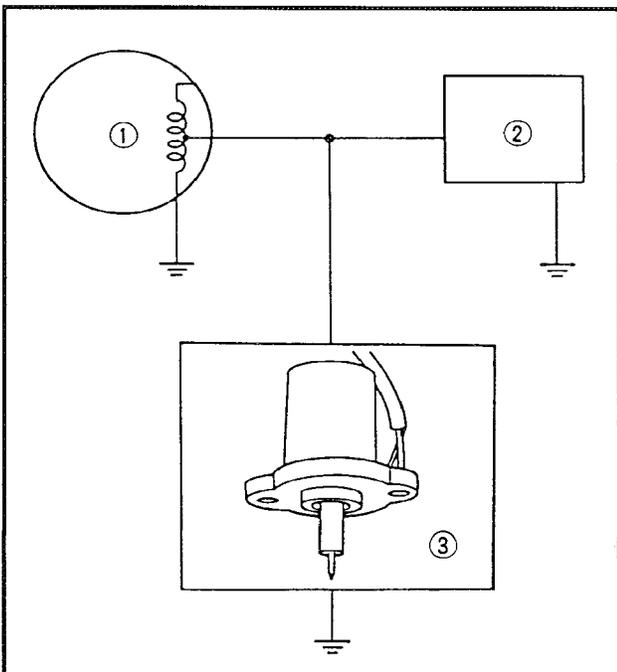
When electric current flows in this thermistor, it begins to be heated up to a specified temperature. This specified temperature is then retained.

Wax element

The wax element changes its volume according to a varying temperature of the thermistor, thereby causing the starter plunger to operate.

Starter plunger

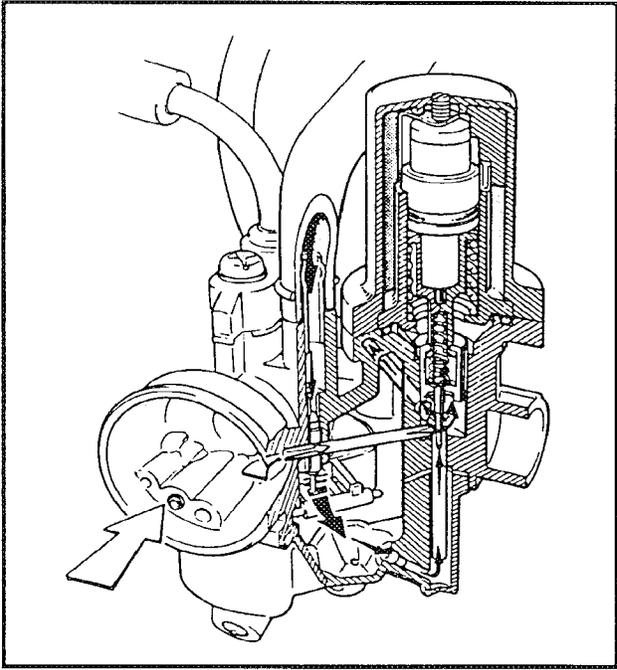
The starter plunger opens or closes the starter passage according to changes in the volume of the wax element.



WIRING SCHEMATIC

Power source is provided by the C.D.I. magneto lighting coil.

- ① C.D.I. magneto
- ② Rectifier/Regulator
- ③ Auto choke unit

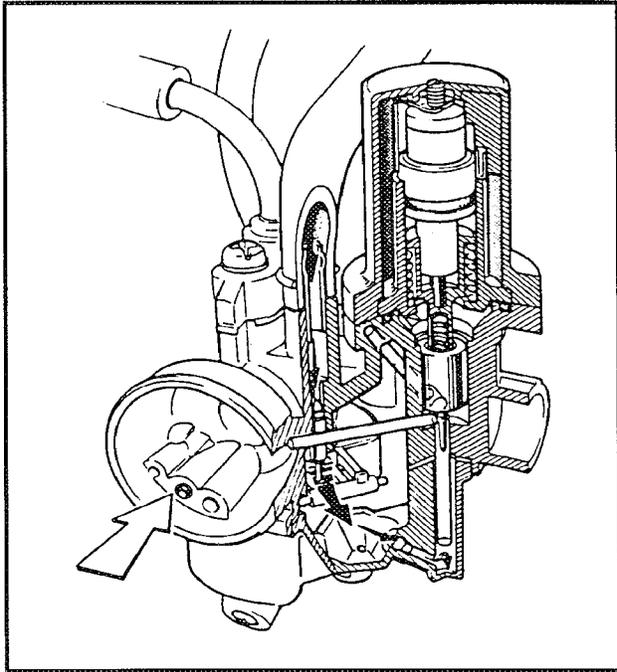
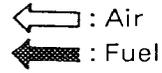


OPERATION

Cold engine

On the cold engine the wax element changes (reduces) its volume according to the ambient temperature.

In this state the starter plunger is at the top, thereby opening the starter plunger.

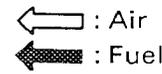


Running engine

When the engine is started, the heated P.T.C. thermistor expands the wax element, gradually pushing the starter plunger and controlling the opening of the starter passage. The further heated thermistor expands the wax element to a complete extent, thereby fully closing the starter passage.

This in turn causes the engine r.p.m. to change (be reduced) with time, finally coming to specified idling.

The wax element expands during the ride as well by means of the P.T.C. thermistor, thereby keeping the starter passage fully closed.





Restarting after engine warm-up

1. Restarting right after ride:

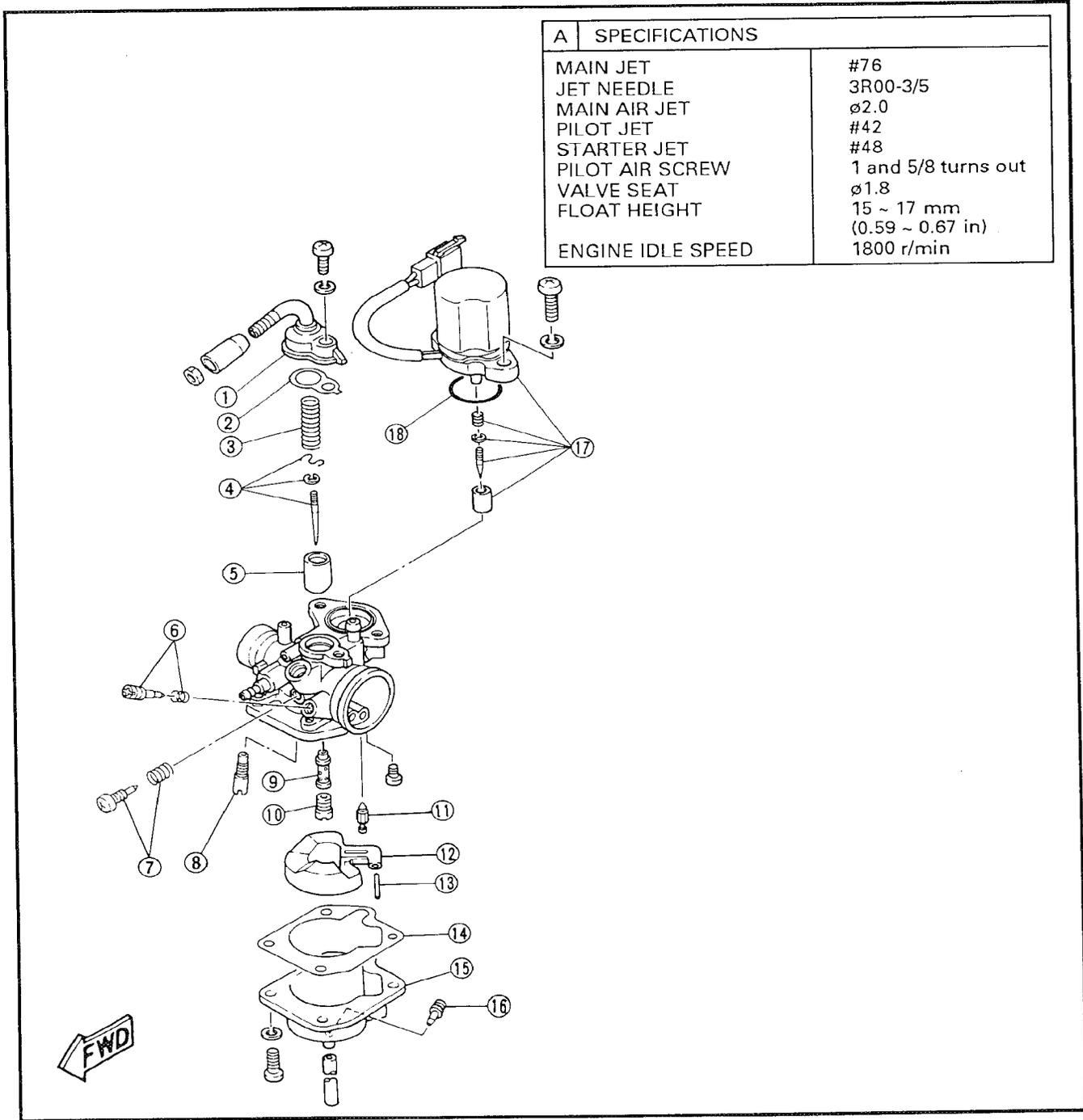
The wax element is fully expanded, so the starter passage is fully closed by the starter plunger.

2. Restarting after leaving engine for a particular time:

The wax element begins to reduce its volume according to the ambient temperature, permitting the starter plunger to open the passage to meet the engine requirement.

CARBURETOR

- ① Carburetor top cover
- ② Gasket
- ③ Spring
- ④ Needle set
- ⑤ Throttle valve
- ⑥ Pilot air screw
- ⑦ Throttle stop screw
- ⑧ Pilot jet
- ⑨ Main nozzle
- ⑩ Main jet
- ⑪ Needle valve
- ⑫ Float
- ⑬ Float pin
- ⑭ Gasket
- ⑮ Float chamber
- ⑯ Drain screw
- ⑰ Auto choke unit assembly
- ⑱ O-ring



A SPECIFICATIONS	
MAIN JET	#76
JET NEEDLE	3R00-3/5
MAIN AIR JET	ø2.0
PILOT JET	#42
STARTER JET	#48
PILOT AIR SCREW	1 and 5/8 turns out
VALVE SEAT	ø1.8
FLOAT HEIGHT	15 ~ 17 mm (0.59 ~ 0.67 in)
ENGINE IDLE SPEED	1800 r/min



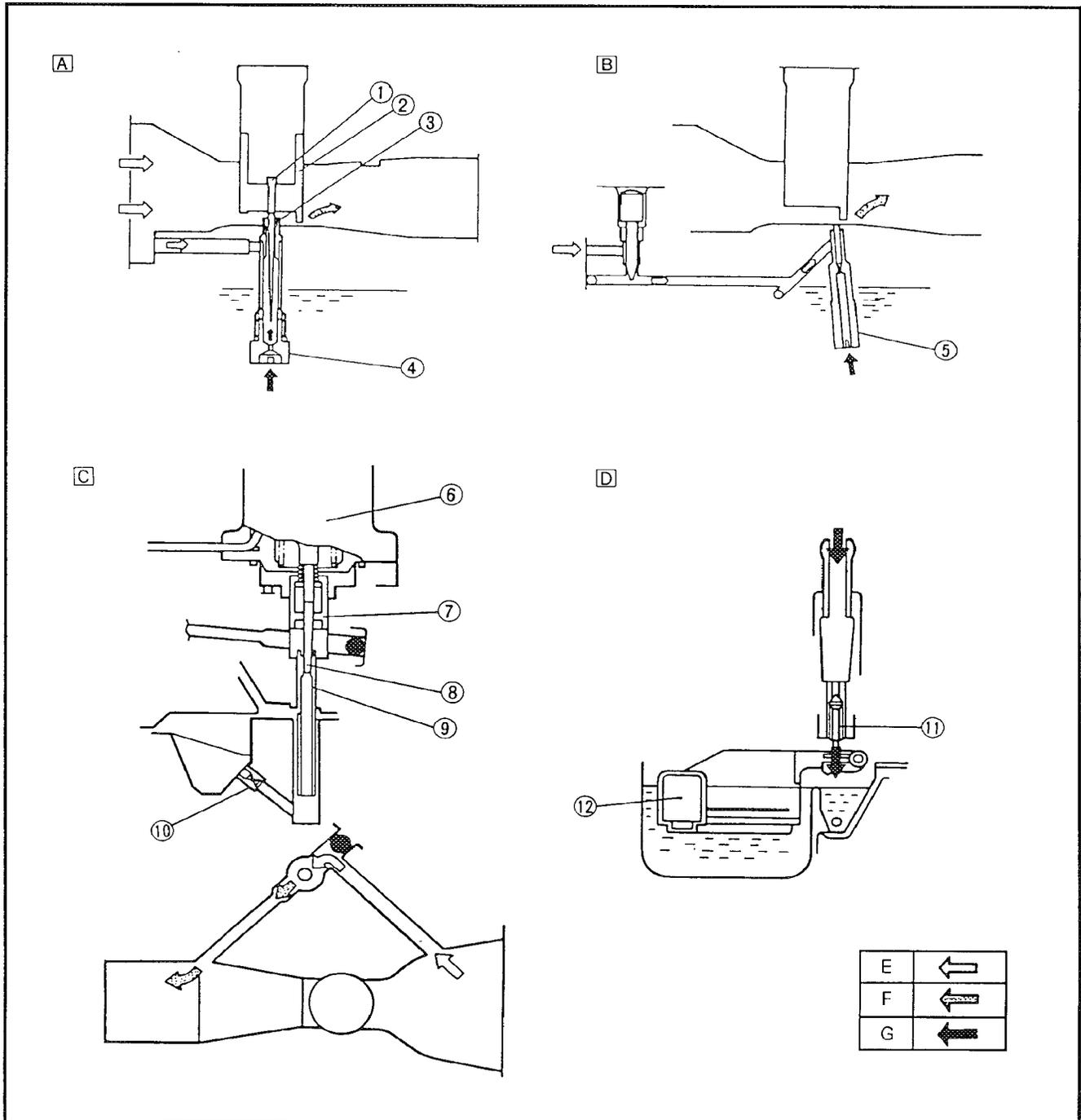


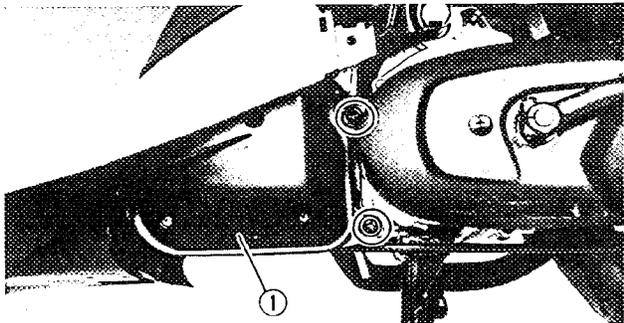
SECTION VIEW

- ① Jet needle
- ② Throttle valve
- ③ Main nozzle
- ④ Main jet
- ⑤ Pilot jet
- ⑥ Auto choke unit

- ⑦ Starter plunger
- ⑧ Starter jet needle
- ⑨ Starter jet needle jet
- ⑩ Starter jet
- ⑪ Needle valve
- ⑫ Float

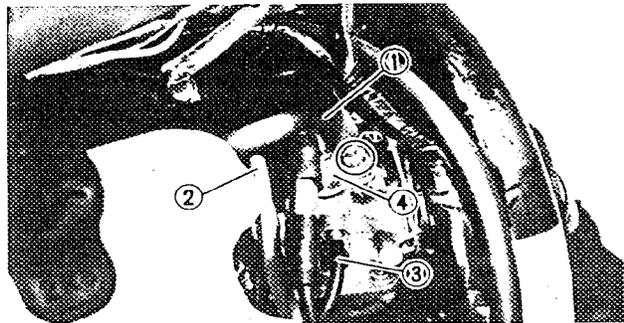
- A Main metering system
- B Slow metering system
- C Starter metering system
- D Fuel metering system
- E Air
- F Mixture
- G Fuel





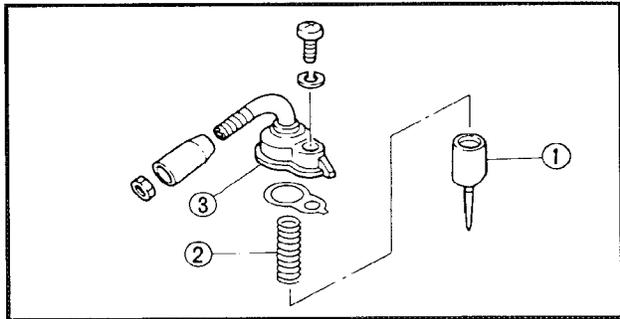
REMOVAL

1. Remove:
 - Tail cover and footrest board
Refer to "CHAPTER 3-TAIL COVER AND FOOTREST BOARD" section.
 - Air cleaner case assembly ①



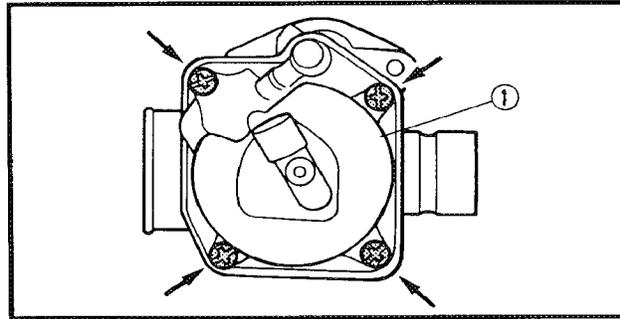
2. Disconnect:
 - Fuel pipe ①
 - Vacuum pipe ②
 - Oil delivery pipe ③
 - Auto choke unit lead

3. Remove:
 - Carburetor top ④
 - Carburetor

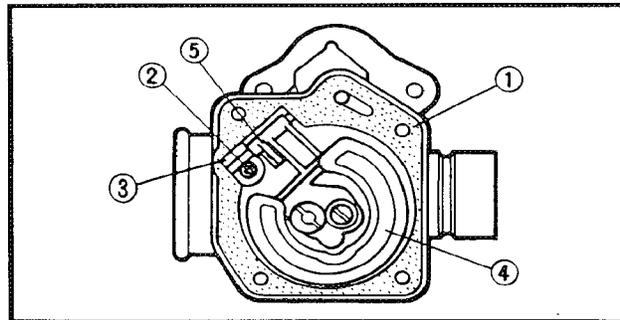


4. Remove:
 - Throttle valve ①
 - Throttle valve spring ②
 - Carburetor top cover ③

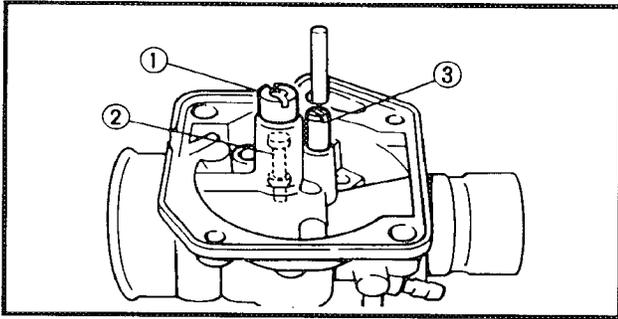
DISASSEMBLY



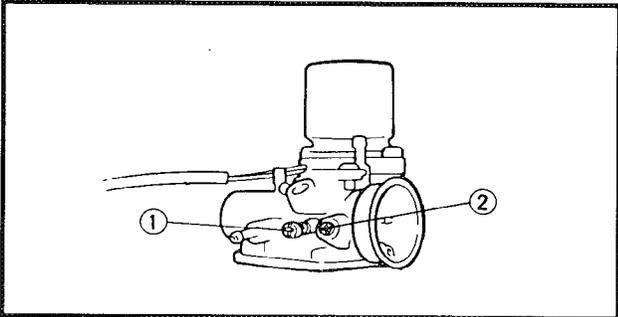
1. Remove:
 - Float chamber ①



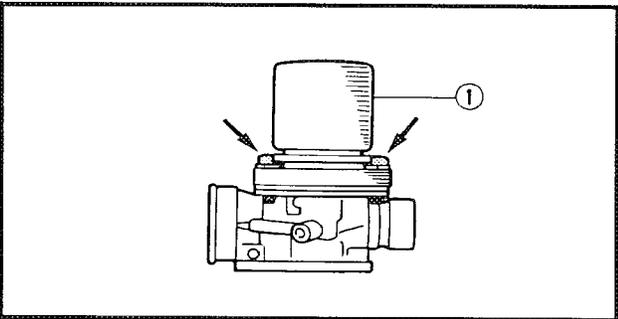
2. Remove:
 - Gasket ①
 - Float pin stop screw ②
 - Float pin ③
 - Float ④
 - Needle valve ⑤



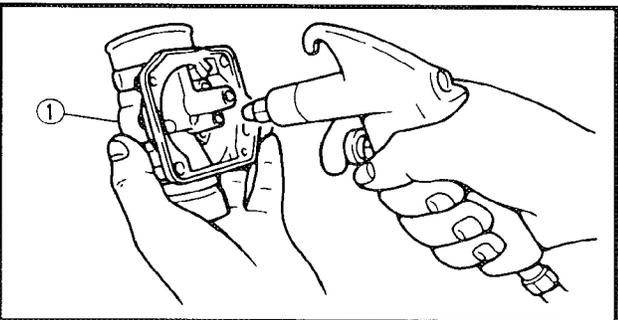
3. Remove:
- Main jet ①
 - Main nozzle ②
 - Pilot jet ③



4. Remove:
- Throttle stop screw ①
 - Pilot air screw ②



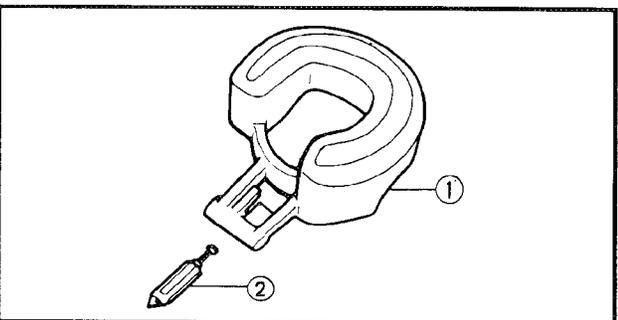
5. Remove:
- Auto choke unit ①
 - O-ring



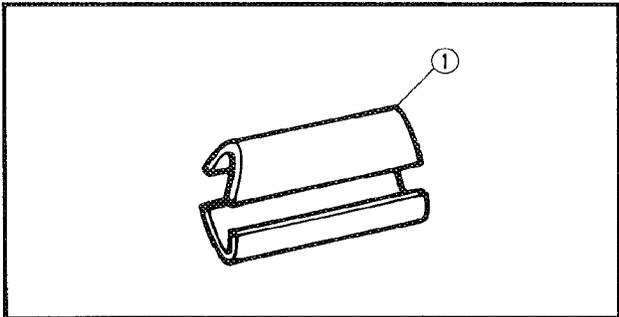
INSPECTION

1. Inspect:
- Carburetor body ①
 - Float chamber
- Contamination → Clean.

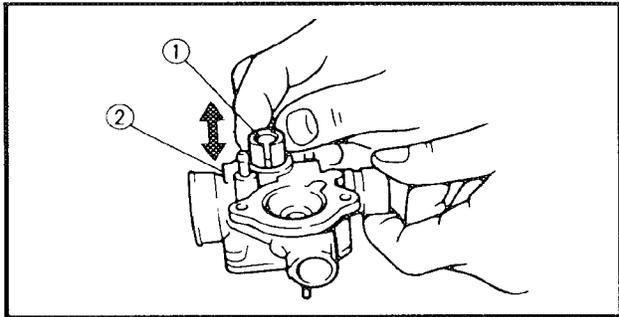
NOTE: _____
 Use a petroleum based solvent for cleaning. Blow out all passages and jets with compressed air.



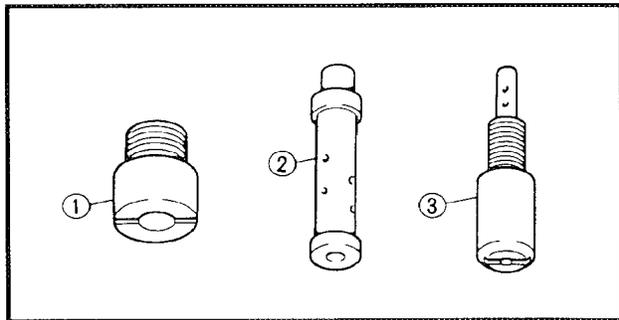
2. Inspect:
- Float ①
 - Damage → Replace.
 - Gasket
 - Damage → Replace.
 - Needle valve ②
 - Wear/Contamination → Replace.



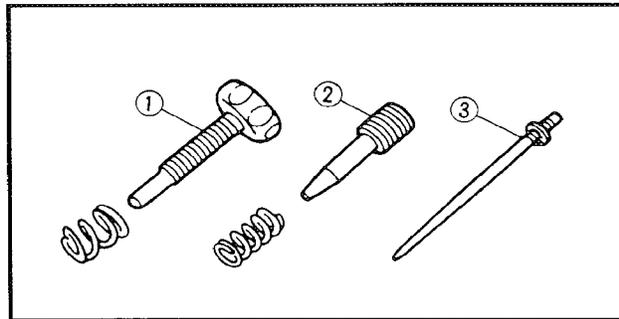
3. Inspect:
- Throttle valve ①
Wear/Damage → Replace.



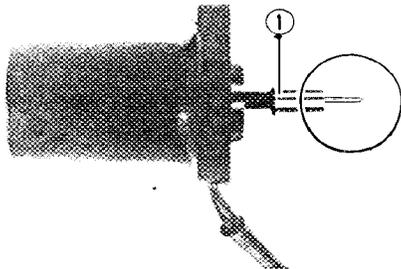
4. Check:
- Free movement
Stick → Replace.
Insert the throttle valve ① into the carburetor body ②, and check for free movement.



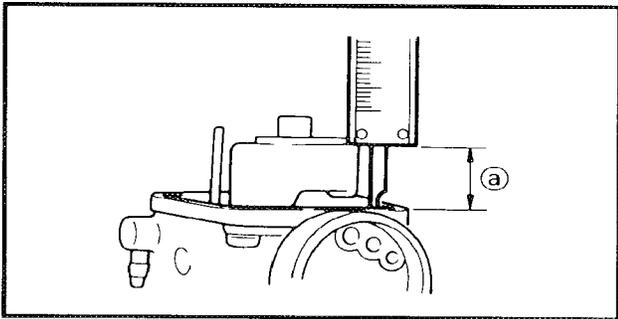
5. Inspect:
- Main jet ①
 - Main nozzle ②
 - Pilot jet ③
Contamination → Replace.



6. Inspect:
- Throttle stop screw ①
Wear/Damage → Replace.
 - Pilot air screw ②
Wear/Damage → Replace.
 - Jet needle ③
Bends/Wear → Replace.



7. Inspect:
- Starter plunger ①
Wear/Damage → Replace.



8. Measure:

- Float height (a)
- Out of specification → Inspect needle valve, float and valve seat.

	Float Height:
	15.0 ~ 16.0 mm (0.63 ± 0.04 in)

Float height measurement steps:

- Install the needle valve, float and float pin to the carburetor body.
- Hold the carburetor in an upside down position.
- Measure the distance between the mating surface of the float chamber (gasket removed) and top of the float using a gauge.

NOTE: _____

The float arm should be resting on the needle valve, but not compressing the needle valve.

- If the float height is not within specification, inspect the needle valve, float and valve seat.
- If it is worn, replace it.

NOTE: _____

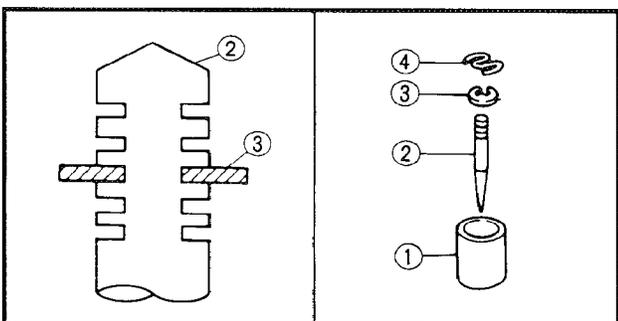
The float height is properly adjusted at the Yamaha factory. Never attempt to adjust it.

ASSEMBLY

To assemble the carburetor, reverse the disassembly procedures. Note the following points.

CAUTION: _____

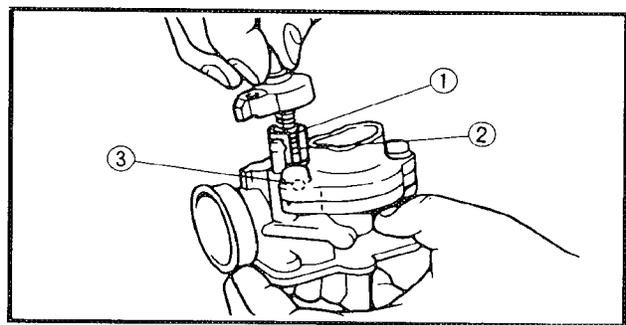
- Before reassembling, wash all parts in clean gasoline.
- Always use a new gasket.



1. Install:

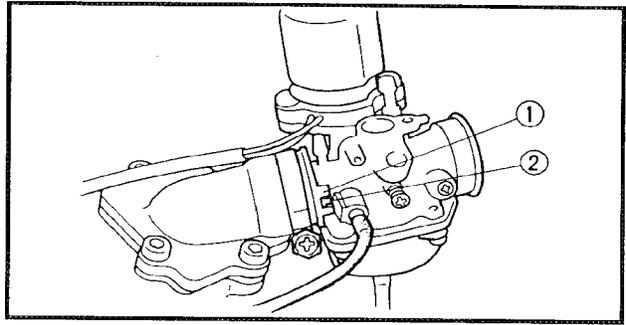
- Throttle valve (1)
- Jet needle (2)
- Clip (3)
- Spring seat (4)

	Jet Needle Clip Position:
	3/5



- 2. Install:
 - Throttle valve ①

NOTE: _____
Align the groove ② of the throttle valve with the projection ③ of the carburetor body.



- 3. Install:
 - Carburetor assembly

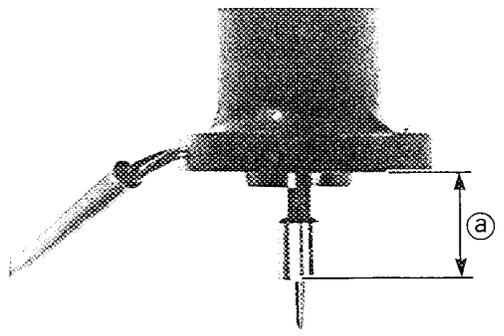
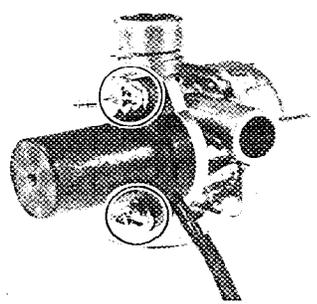
NOTE: _____
Align the projection ① with the projections ② .

INSTALLATION

- 1. Install:
 - Carburetor assembly
 Reserve the removal procedure.

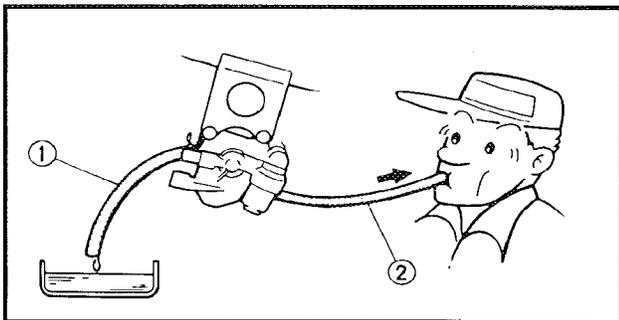
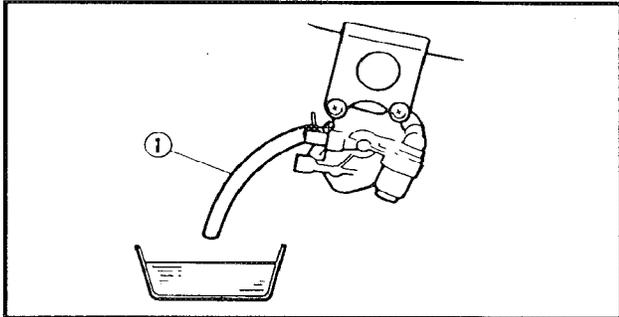
AUTO CHOKE UNIT CHECK

- 1. Remove:
 - Auto choke unit
- 2. Measure:
 - Starter plunger height ①
 Plunger height will not change with the temperature change → Replace.



**FUEL COCK
INSPECTION**

1. Stop the engine.
2. Remove:
 - Side cover (right)
Refer to "CHAPTER 3. – TAIL COVER AND FOOTREST BOARD" section.
3. Inspect:
 - Fuel cock

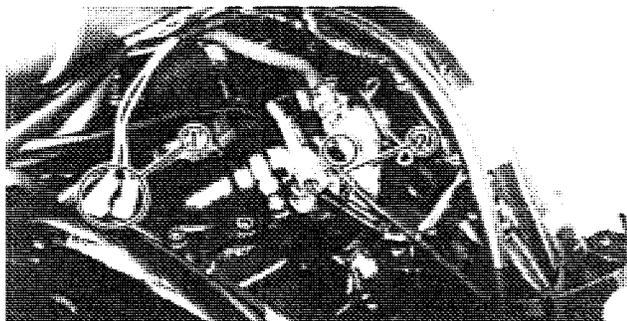
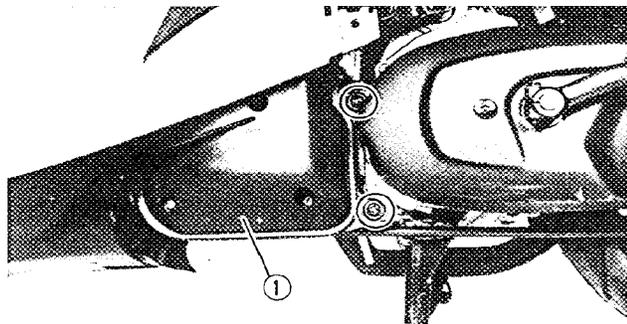


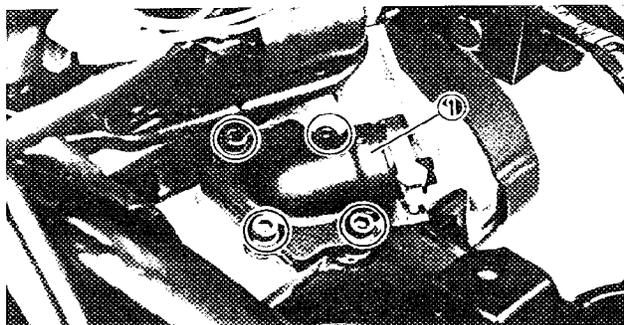
Fuel cock inspection steps:

- Disconnect the fuel hose (1).
- Place the receptacle under the fuel hose end.
- If fuel stops flowing out in a few seconds, the fuel cock is in good condition. If not, clean or replace the fuel cock.
- Disconnect the vacuum hose (2) and breathe in the vacuum hose with the mouth etc. for vacuum.
- If fuel flows out of the fuel hose under vacuum and stops under non-vacuum, the fuel cock is in good condition.
If not, clean or replace the vacuum hose, fuel hose and fuel cock.

**REED VALVE
REMOVAL**

1. Remove:
 - Tail cover and footrest board
Refer to "CHAPTER 3-TAIL COVER AND FOOTREST BOARD" section.
 - Air cleaner case assembly (1)
2. Remove:
 - Carburetor
Refer to "CARBURETOR – REMOVAL" section.
3. Disconnect:
 - Oil level gauge lead (1)
 - Oil hose (2)
4. Remove:
 - Oil tank





- 5. Remove:
 - Carburetor joint ①
 - Reed valve assembly

INSPECTION

- 1. Inspect:
 - Carburetor joint
 - Damage/ Cracks → Replace.
 - Reed valve
 - Fatigue/Cracks → Replace.

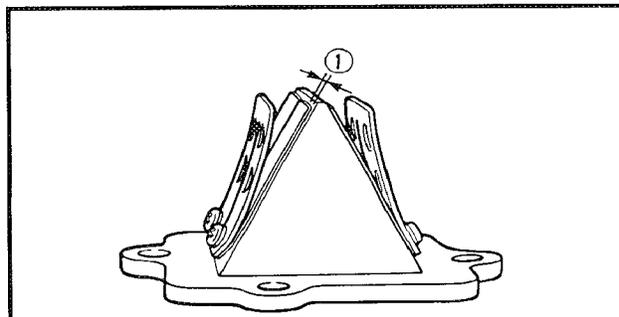
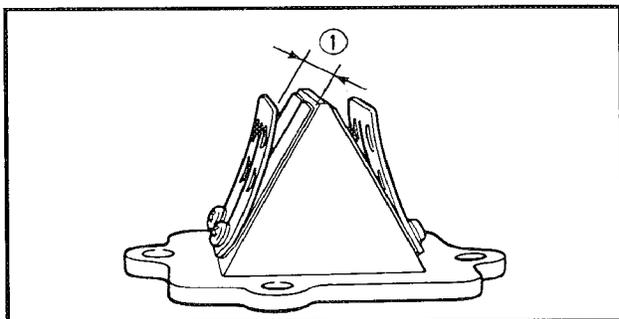
Inspection steps:

- Visually inspect the reed valve.

NOTE: _____

Correct reed valve should fit flush or nearly flush against valve seat.

- If in doubt as to sealing ability, apply suction to carburetor side of assembly.
- Leakage should be slight to moderate.



- 2. Measure:
 - Valve stopper height ①:
 - Out of specification → Adjust stopper/Replace valve stopper.

 **Valve Stopper Height ①:**
6.0 ~ 6.4 mm (0.24 ~ 0.25 in)

- 3. Measure:
 - Reed valve clearance ①:
 - Out of specification → Replace reed valve.

 **Reed Valve Clearance ①:**
Less than 0.2 mm (0.008 in)

**INSTALLATION**

When installing the reed valve assembly, reverse the removal procedure. Note the following points.

1. Install:
 - Gasket (new)
2. Tighten:
 - Reed valve securing bolts



9 Nm (0.9 m · kg, 6.5 ft · lb)

NOTE:

Tighten each bolt gradually to avoid warping.

**CHAPTER 6.
CHASSIS**

FRONT WHEEL E-15
 REMOVAL E-15
 INSPECTION E-15
 ASSEMBLY E-16
 INSTALLATION F-1

REAR WHEEL F-2
 REMOVAL F-2
 INSPECTION F-2
 ASSEMBLY F-3
 INSTALLATION F-3

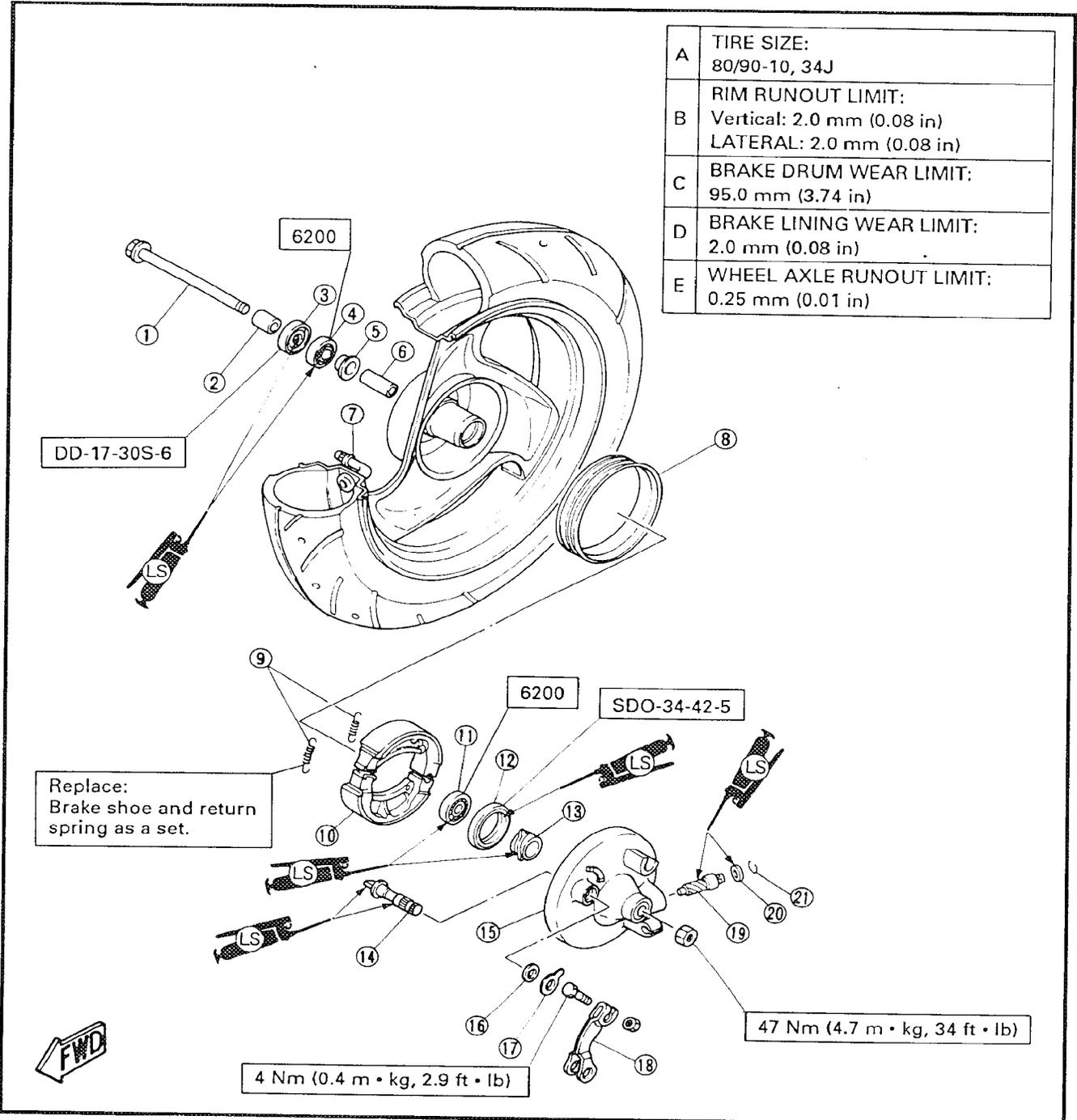
HANDLEBAR, STEERING AND FRONT FORK F-4
 REMOVAL F-5
 DISASSEMBLY F-6
 INSPECTION F-6
 ASSEMBLY AND INSTALLATION F-7

REAR SHOCK ABSORBER F-8
 REMOVAL F-9
 INSPECTION F-9
 INSTALLATION F-9

CHASSIS

FRONT WHEEL

- ① Wheel axle
- ② Collar
- ③ Oil seal
- ④ Bearing
- ⑤ Spacer
- ⑥ Collar
- ⑦ Valve
- ⑧ Ring
- ⑨ Return spring
- ⑩ Brake shoe
- ⑪ Bearing
- ⑫ Oil seal
- ⑬ Speedometer drive gear
- ⑭ Camshaft
- ⑮ Brake shoe plate
- ⑯ Camshaft seal
- ⑰ Wear indicator
- ⑱ Camshaft lever
- ⑲ Speedometer driven gear
- ⑳ Plain washer
- ㉑ Stop ring

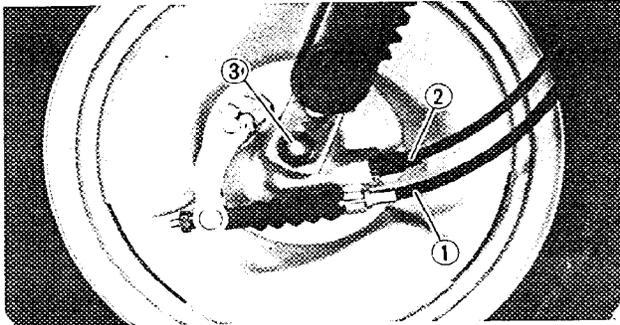


REMOVAL

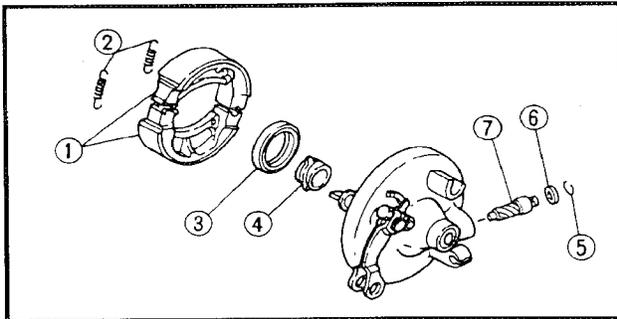
1. Place the scooter on its centerstand and place a suitable stand under the engine.

⚠ WARNING

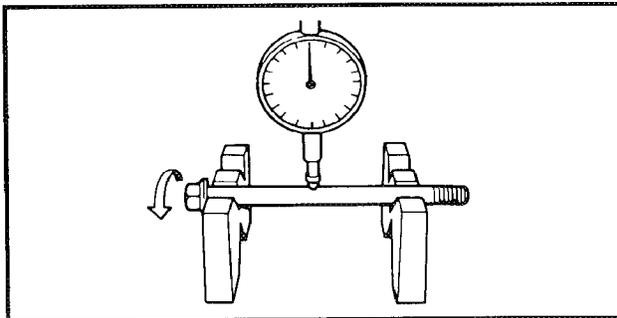
Securely support the scooter so there is no danger of it falling over.



2. Remove:
 - Brake cable ①
 - Speedometer cable ②
 - Axle nut ③



3. Remove:
 - Brake shoe ①
 - Return spring ②
 - Oil seal ③
 - Speedometer drive gear ④
 - Stop ring ⑤
 - Plain washer ⑥
 - Speedometer driven gear ⑦



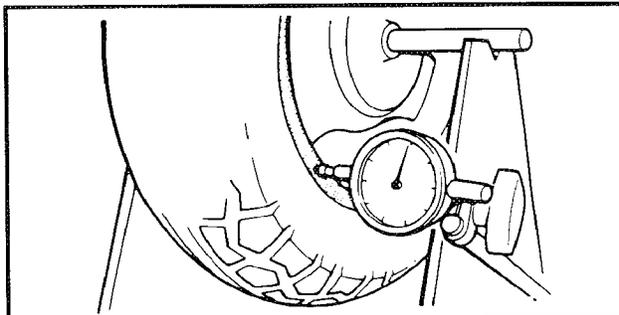
INSPECTION

1. Measure:
 - Wheel axle runout
 Out of specification → Replace.

	Wheel Axle Runout Limit: 0.25 mm (0.01 in)
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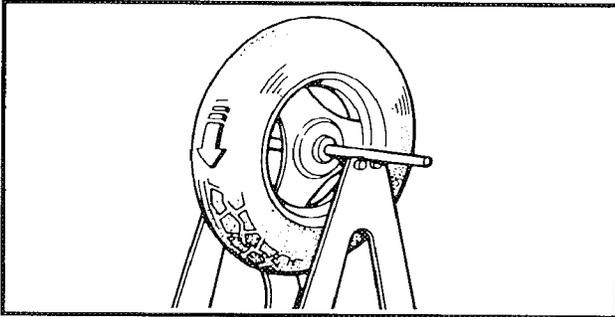
⚠ WARNING

Do not attempt to straighten a bent axle.



2. Measure:
 - Wheel runout
 Out of specification → Replace.

	Runout Limit: Vertical 2.0 mm (0.08 in) Lateral 2.0 mm (0.08 in)
---	---



3. Inspect:
 - Wheel
Cracks/Bends/Warpage → Replace.
4. Inspect:
 - Wheel bearings
Bearings allow play in the wheel hub or wheel turns roughly → Replace.

Wheel bearing replacement steps:

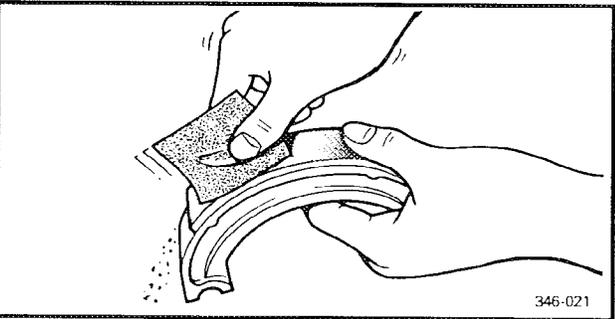
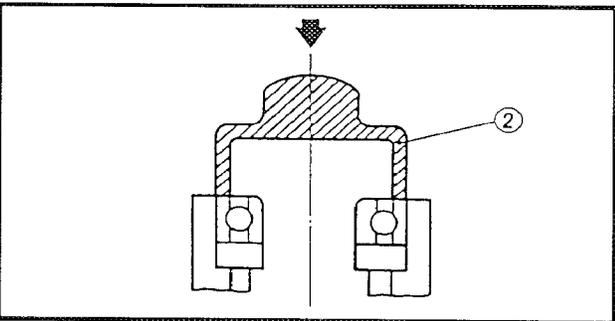
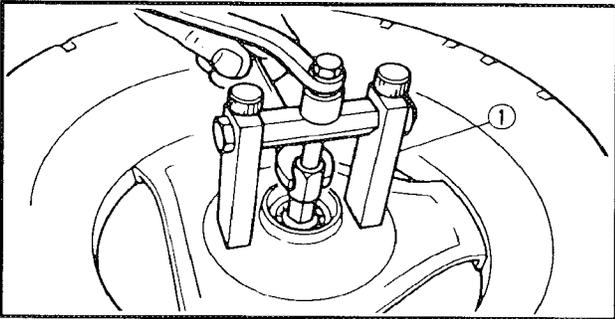
- Clean the out side of the wheel hub.
- Remove the bearing using a general bearing puller ①.
- Install the new bearing.

NOTE: _____

Use a socket ② that matches the outside diameter of the race of the bearing.

CAUTION: _____

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



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

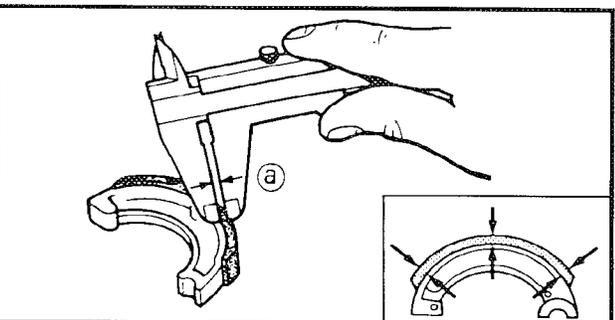
NOTE: _____

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

6. Measure:
 - Brake shoe thickness ①
Out of specification → Replace.



Brake lining Thickness:
4.0 mm (0.16 in)
Limit: 2.0 mm (0.08 in)

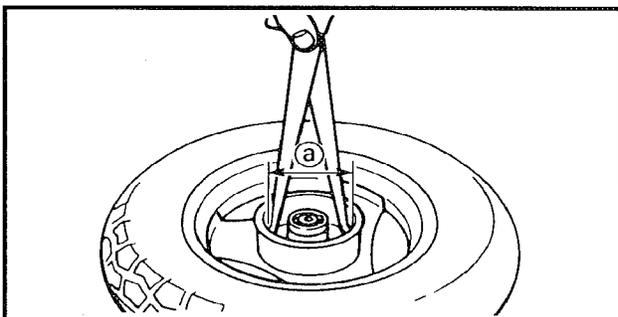




7. Inspect:

- Brake drum inner surface
Oil/Scratches → Remove.

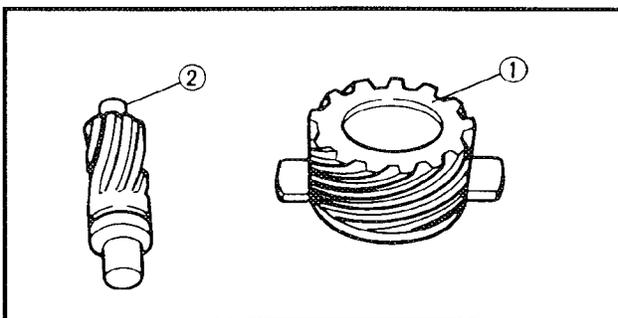
Oil	Use a rag soaked in lacquer thinner or solvent.
Scratches	Use an emery cloth (lightly and evenly polishing).



8. Measure:

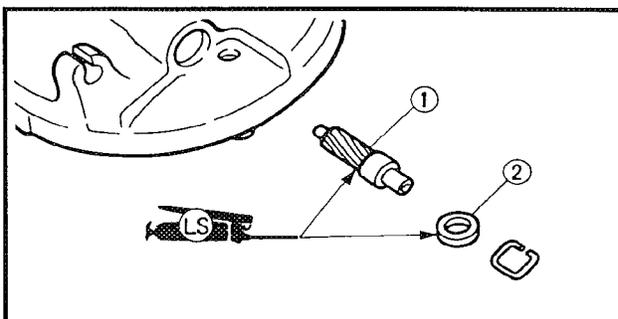
- Brake drum inside diameter (a)
Out of specification → Replace.

	Brake Drum Wear Limit: 96.0 mm (3.78 in)
---	--



9. Inspect:

- Speedometer drive gear (1)
- Speedometer driven gear (2)
- Wear/Damage → Replace.



ASSEMBLY

When assembling the brake shoe plate, reverse the removal procedure.

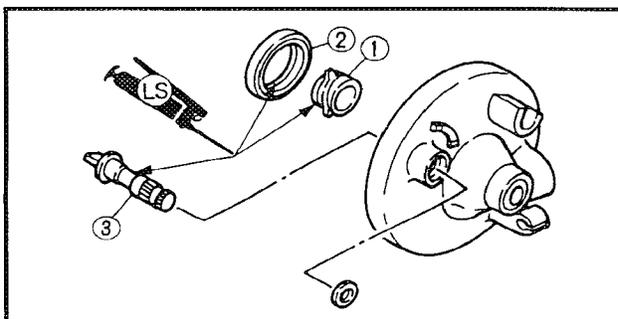
Note the following points.

1. Apply:

- Lithium-soap base grease
To speedometer driven gear (1) and oil seal (2).

2. Apply:

- Lithium-soap base grease
To speedometer drive gear (1), dust seal (2) and brake cam shaft (3).





3. Install:
- Dust seal (new)

NOTE: _____
Install the dust seal with their manufacturer's marks or numbers facing outward.

4. Install:
- Brake cam shaft ①

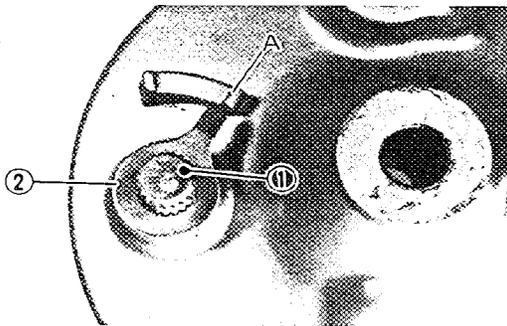
NOTE: _____
Apply the lithium soap base grease onto the brake cam shaft and pin.

CAUTION: _____

After installing the brake cam shaft, wipe off the excess grease.

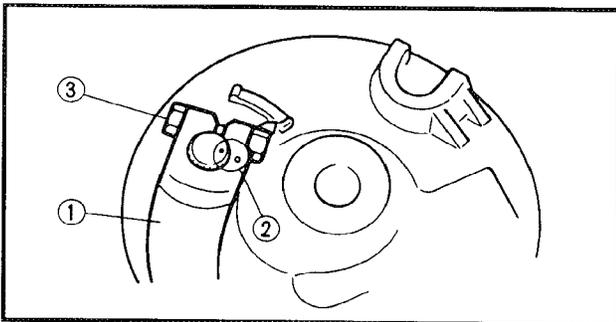
5. Install:
- Wear indicator ②

NOTE: _____
Align the wear indicator projection with "A" line as shown.



6. Install:
- Cam shaft lever ①

NOTE: _____
Align the camshaft mark with the lever mark ② as shown.

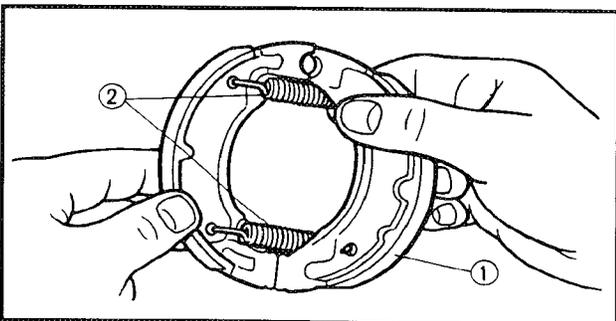


 Bolt ③ (cam shaft lever):
4 Nm (0.4 m • kg, 2.9 ft • lb)

7. Install:
- Brake shoe ①
 - Return spring ②

CAUTION: _____

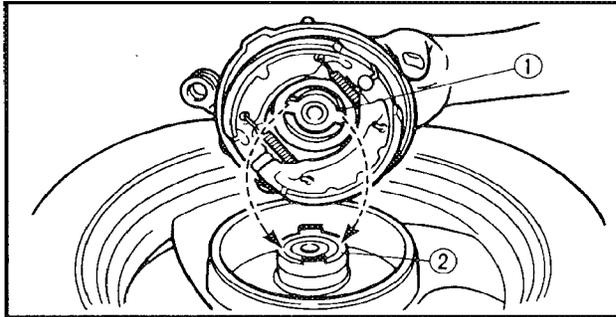
When installing the brake shoe, take care not to apply grease to the brake shoe.



INSTALLATION

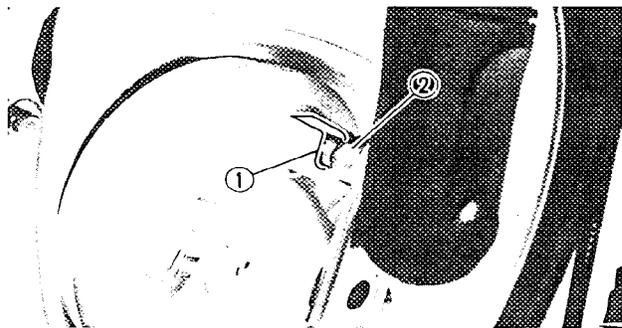
When installing the front wheel, reverse the removal procedure.

Note the following points.



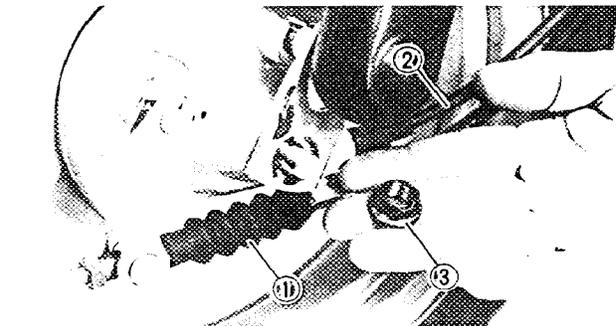
- 1. Install:
 - Brake shoe plate.

NOTE: _____
 Make sure the projections ① inside the gear unit are meshed with the flats ② in the wheel hub.



- 2. Install:
 - Front wheel

NOTE: _____
 Be sure the boss ② on the front fork correctly engages with the locating slot ① on the brake shoe plate assembly.



- 3. Install:
 - Front brake cable ①
 - Speedometer cable ②
 - Axle nut ③

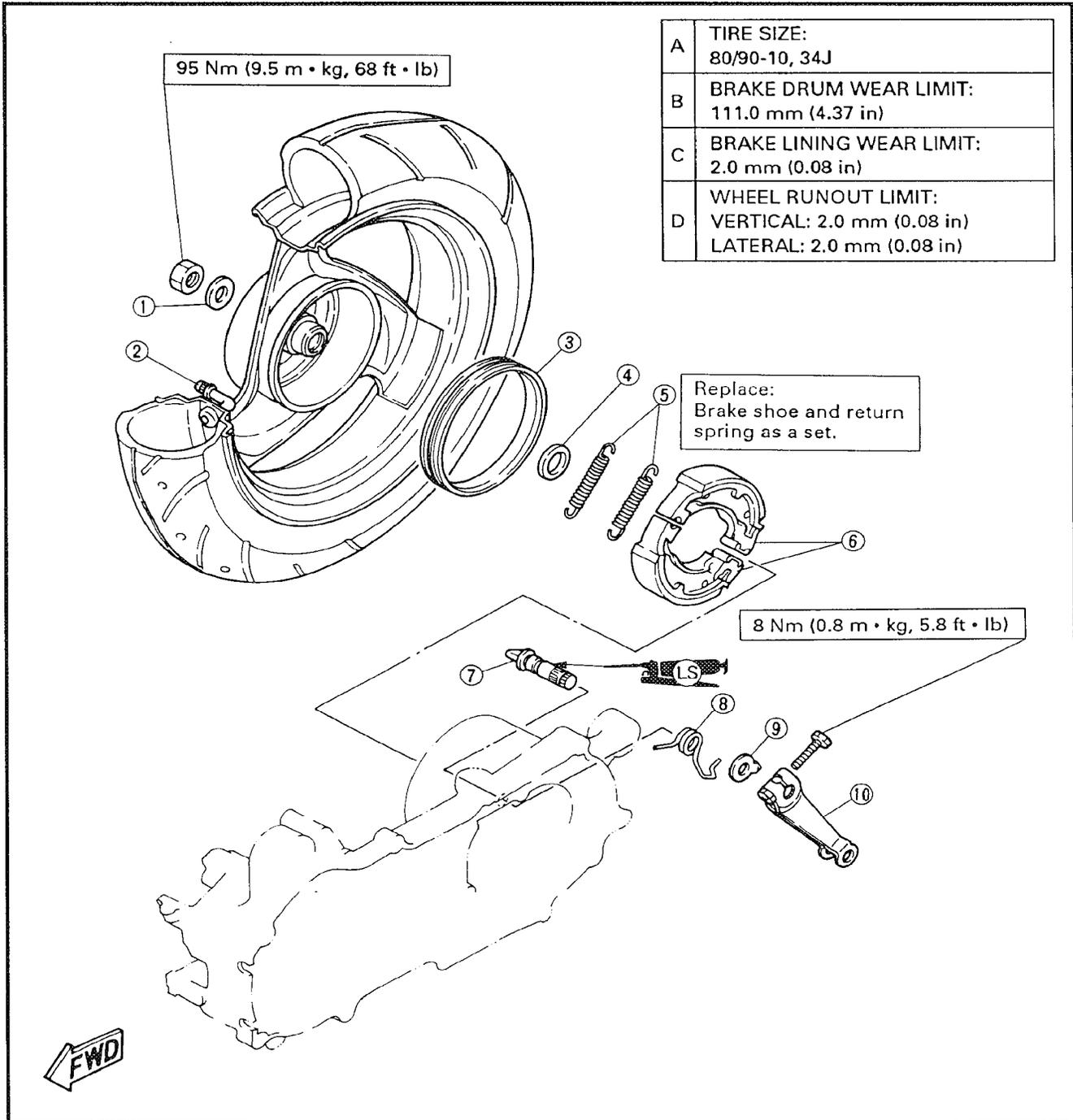
	Axle nut: 47 Nm (4.7 m · kg, 34 ft · lb)
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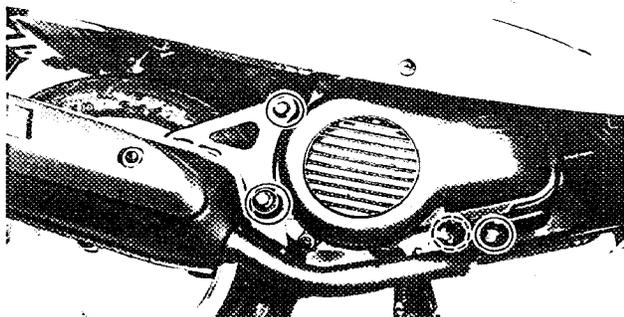
- 4. Adjust
 - Front brake lever free play
Refer to "CHAPTER 3 – FRONT BRAKE LEVER FREE PLAY CHECK" section.

	Front brake lever free play: 10 ~ 20 mm (0.4 ~ 0.8 in)
---	--

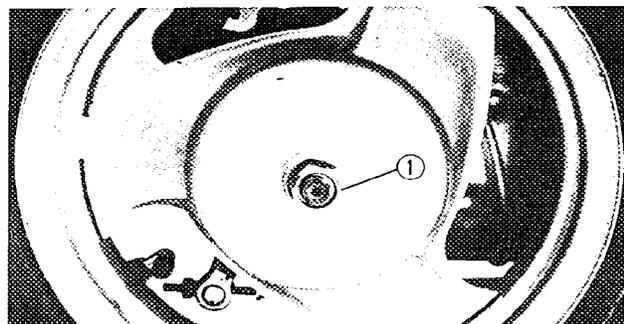
REAR WHEEL

- ① Plain washer
- ② Valve
- ③ Ring
- ④ Plain washer
- ⑤ Return spring
- ⑥ Brake shoe
- ⑦ Brake camshaft
- ⑧ Torsion spring
- ⑨ Wear indicator
- ⑩ Camshaft lever



**REMOVAL**

1. Remove:
 - Muffler assembly

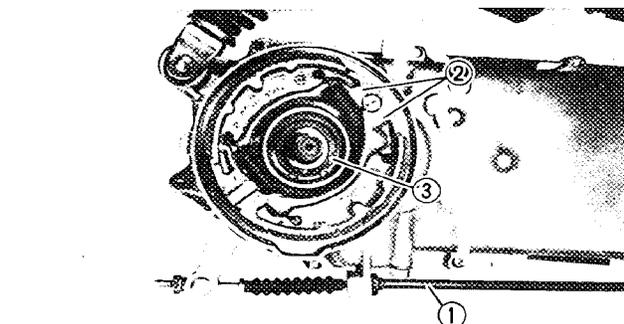


2. Loosen:
 - Rear axle nut ①

NOTE:

When loosening axle nut, apply the rear brake.

3. Remove:
 - Rear wheel



4. Remove:
 - Rear brake cable ①
 - Brake shoe ②
 - Plain washer ③

INSPECTION

1. Inspect:
 - Wheel
 - Refer to "FRONT WHEEL – INSPECTION" section.
2. Measure:
 - Wheel runout
 - Refer to "FRONT WHEEL – INSPECTION" section.



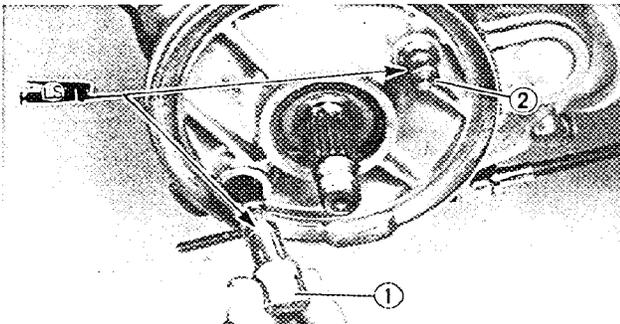
Rim Runout Limits:
 Vertical: 2.0 mm (0.08 in)
 Lateral: 2.0 mm (0.08 in)

3. Check:
 - Wheel bearings
Refer to "FRONT WHEEL – INSPECTION" section.
4. Inspect:
 - Brake lining surface
Refer to "FRONT WHEEL – INSPECTION" section.
5. Measure:
 - Brake lining thickness
Refer to "FRONT WHEEL – INSPECTION" section.

	Brake Lining Thickness:
	4.0 mm (0.16 in)
	Wear Limit:
	2.0 mm (0.08 in)

6. Inspect:
 - Brake drum inner surface
Refer to "FRONT WHEEL – INSPECTION" section.
7. Measure:
 - Brake drum inside diameter
Refer to "FRONT WHEEL – INSPECTION" section.

	Brake Drum Wear Limit:
	111.0 mm (4.37 in)



ASSEMBLY

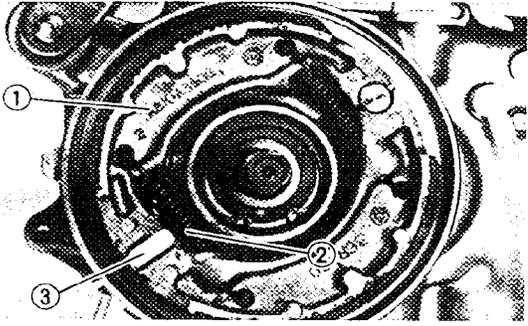
When assembling the brake shoe plate, reverse the removal procedure.

Note the following points.

1. Install:
 - Brake camshaft ①

NOTE: _____
Apply the lithium soap base grease onto the brake camshaft ① and pin ② .

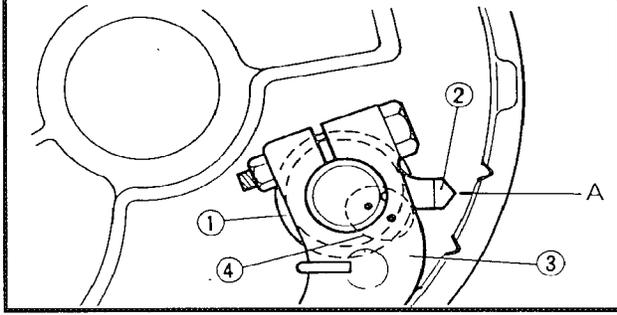
CAUTION: _____
After installing the brake cam shaft, take off the excess grease.



2. Install:
- Brake shoe ①
 - Return spring ②

NOTE: _____
Install with the punched mark ③ outside.

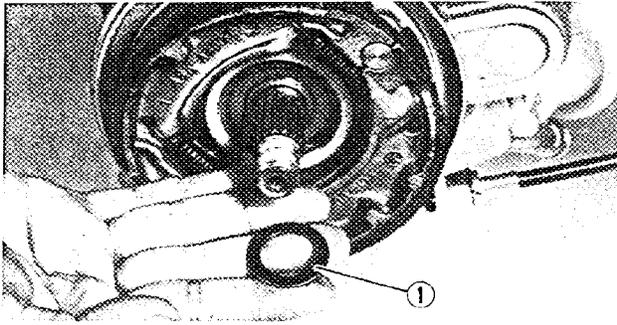
CAUTION: _____
When installing the spring and brake shoe, take care not to damage the spring.



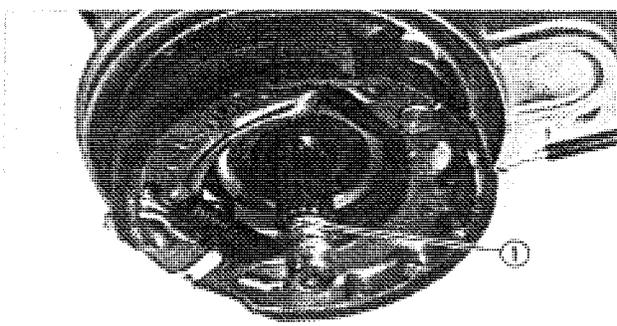
3. Install:
- Torsion spring ①
 - Wear indicator ②
 - Cam shaft lever ③

NOTE: _____
• Align the wear indicator ② projection with "A" line as shown.
• Align the punch marks ④.

	Bolt (cam shaft lever): 8 Nm (0.8 m • kg, 5.8 ft • lb)
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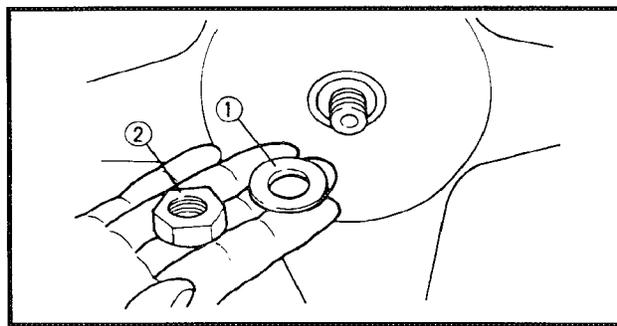


4. Install:
- Plain washer ①
 - Brake cable



INSTALLATION
When installing the rear wheel, reverse the removal procedure.
Note the following points.

1. Clean:
- Rear wheel axle ①



2. Install:
- Rear wheel
 - Plain washer ①
 - Nut ②

NOTE: _____
Make sure the splines on the wheel hub fit the rear drive axle.



Nut (rear wheel axle):
104 Nm (10.4 m • kg, 75.4 ft • lb)

3. Install:

- Muffler



Bolt (exhaust pipe side):
9 Nm (0.9 m • kg, 6.5 ft • lb)

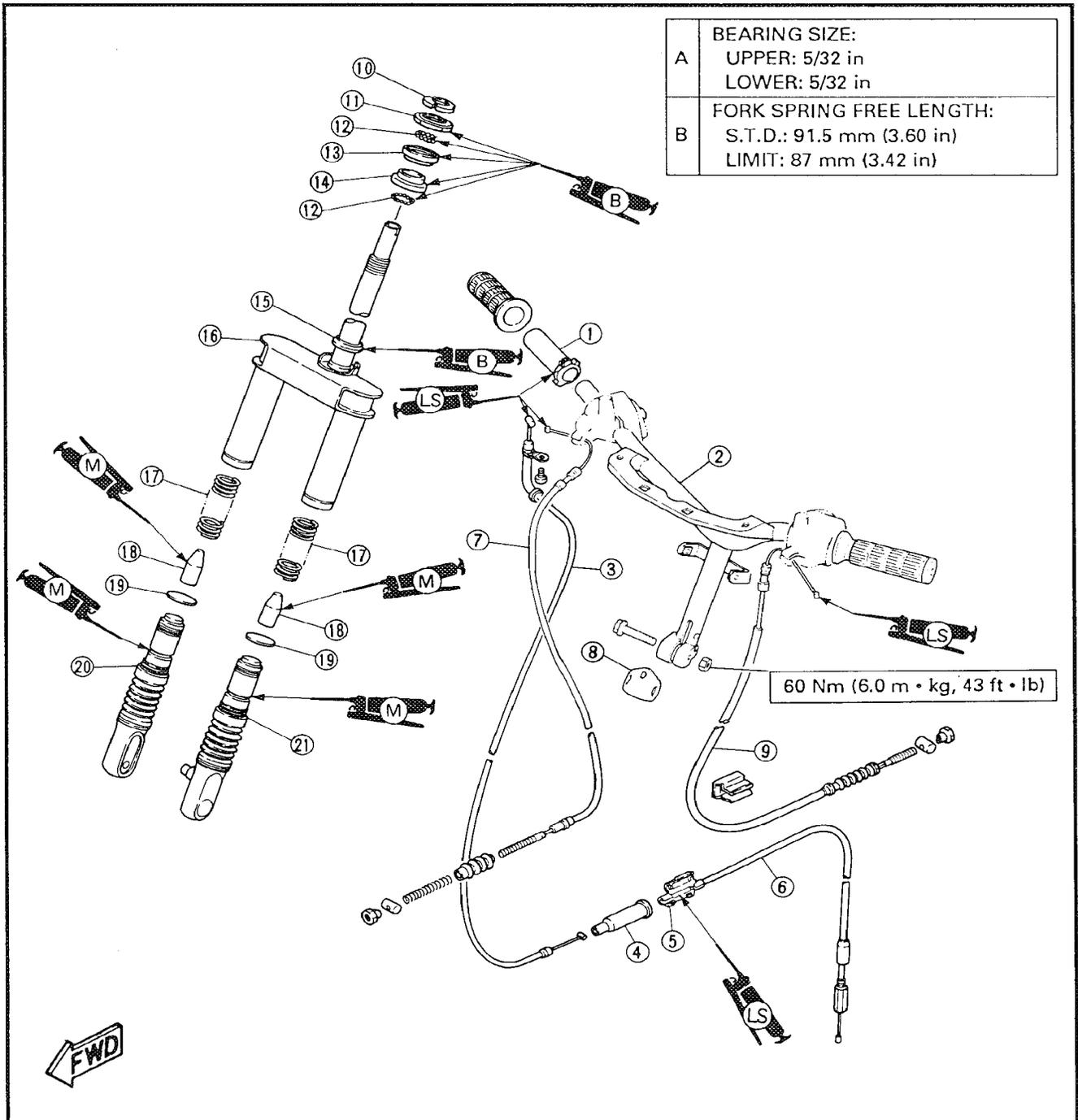
Bolt (muffler side):
26 Nm (2.6 m • kg, 19 ft • lb)

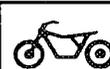
4. Adjust:

- Rear brake lever free play
Refer to "CHAPTER 3 – REAR BRAKE LEVER
FREE PLAY CHECK" section.

HANDLEBAR, STEERING AND FRONT FORK

- | | | |
|-----------------------|------------------------------|-------------------------------|
| ① Throttle grip guide | ⑧ Cover | ⑮ Lower bearing race (lower) |
| ② Handlebar | ⑨ Rear brake cable | ⑯ Steering column |
| ③ Throttle cable | ⑩ Ring nut | ⑰ Fork spring |
| ④ Boot | ⑪ Upper bearing race (upper) | ⑱ Rubber |
| ⑤ Connector | ⑫ Bearing | ⑲ Spring seat |
| ⑥ Throttle cable | ⑬ Upper bearing race (lower) | ⑳ Inner tube assembly (right) |
| ⑦ Front brake cable | ⑭ Lower bearing race (upper) | ㉑ Inner tube assembly (left) |



**REMOVAL**

1. Place the scooter on the centerstand and place a suitable stand under the engine.

! WARNING

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

2. Remove:

- Front wheel
Refer to "FRONT WHEEL - REMOVAL" section.

3. Remove:

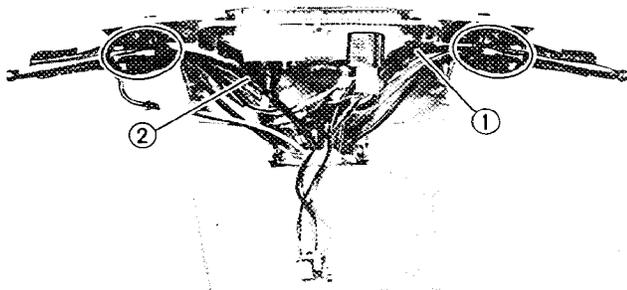
- Front fender
- Front panel
Refer to "CHAPTER 3 - FRONT FENDER AND FRONT PANEL" section.

4. Remove:

- Handlebar cover
- Rear view mirror
Refer to "CHAPTER 3 - HANDLEBAR COVER" section.

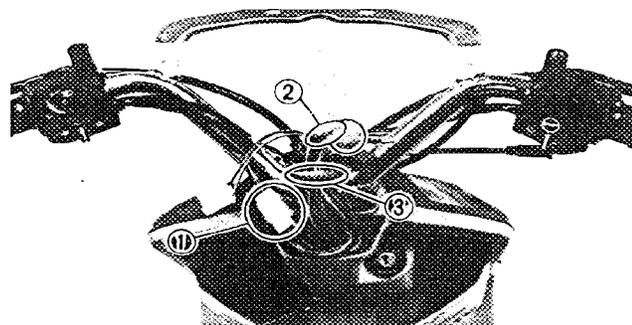
5. Remove:

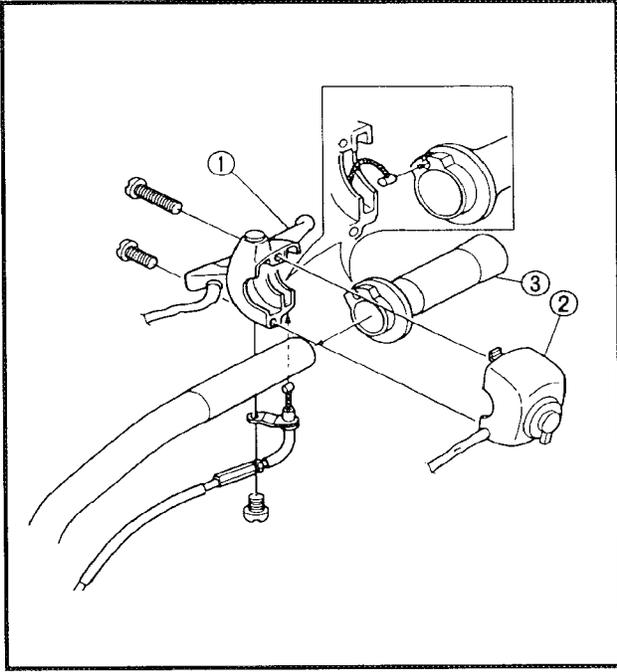
- Front brake cable ①
- Rear brake cable ②



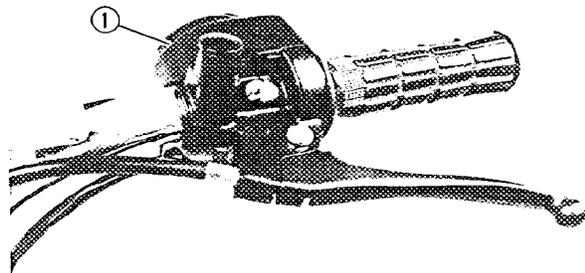
6. Disconnect:

- Handlebar switch lead ① (left and right)
- Front brake switch lead ②
- Rear brake switch lead ③

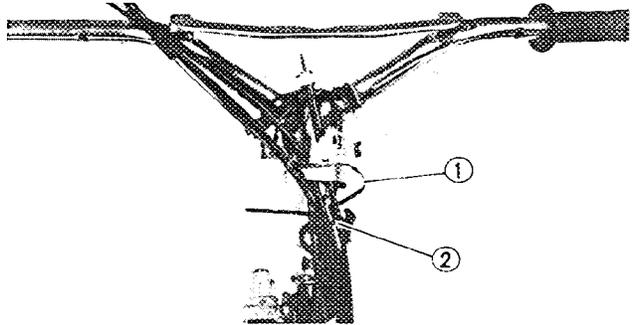




7. Remove:
- Lever holder ① (right)
 - Handlebar switch ② (right)
 - Throttle grip ③

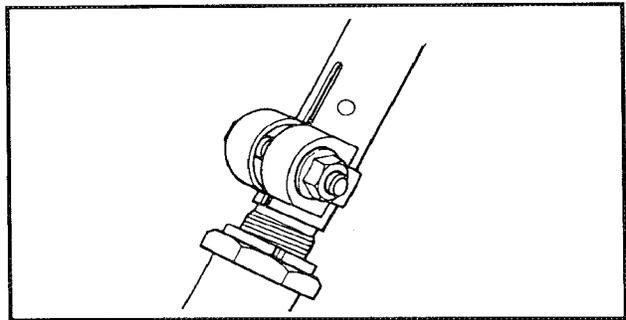


8. Remove:
- Handlebar switch ① (left)

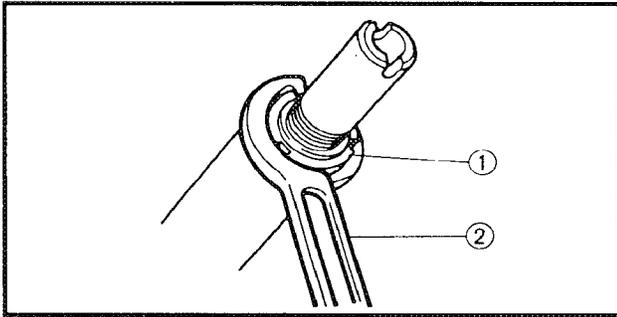


9. Unhook:
- Wire harness strap ①

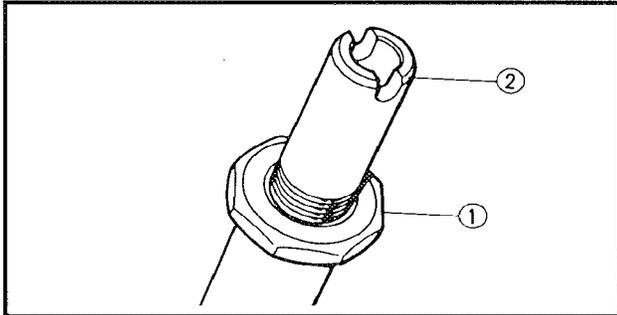
10. Remove:
- Band ②



11. Remove:
- Handlebar



12. Remove:
- Ring nut ①
- Use the Ring Nut Wrench ②

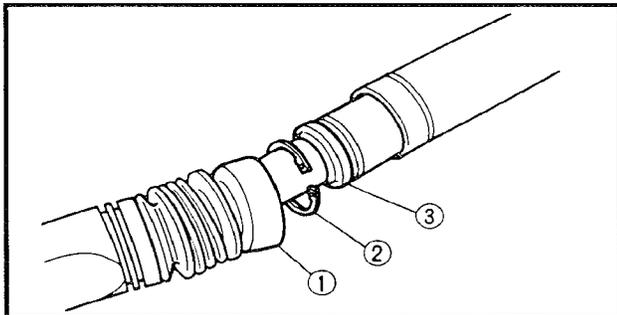


13. Remove:
- Upper bearing race ①

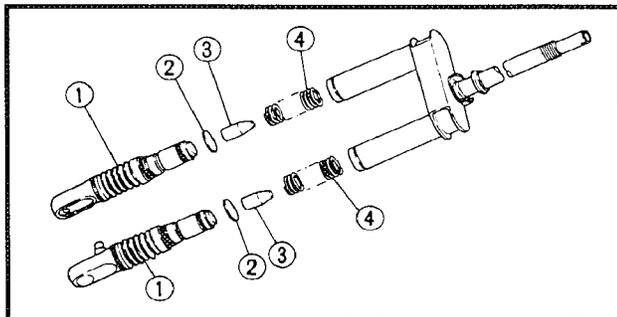
NOTE: _____
Support the steering column so that it may not fall down.

- Steering column ②
- Bearings

DISASSEMBLY

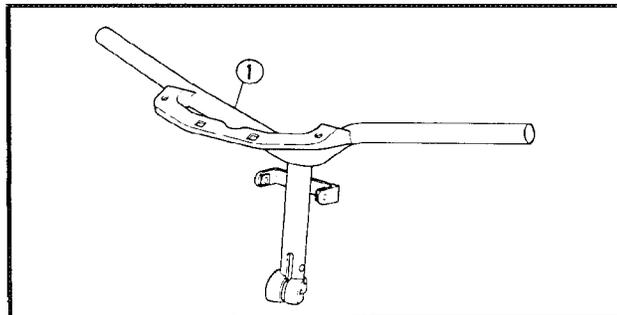


1. Remove:
- Boots ①
 - Circlip ②
 - Oil seal ③

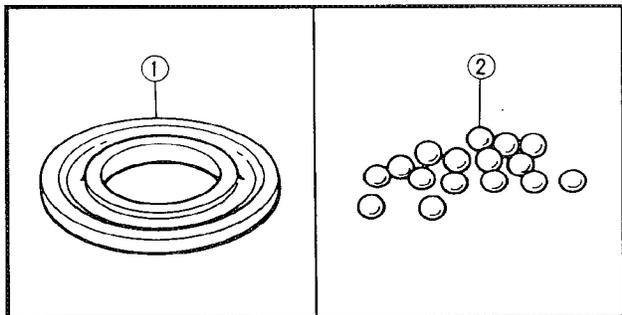


2. Remove:
- Inner tube ①
 - Spring seat ②
 - Rubber ③
 - Front fork spring ④

INSPECTION



1. Inspect:
- Handlebar ①
- Bend/Damage/Crack → Replace.



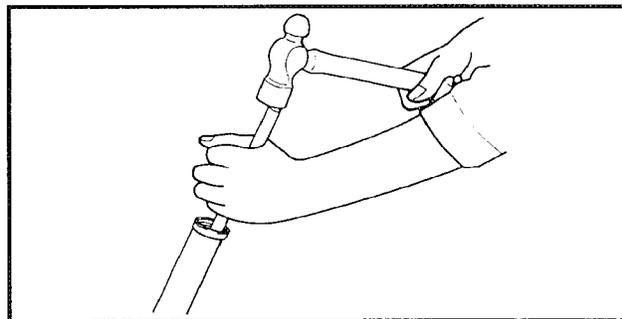
2. Wash the bearings in solvent.

3. Inspect:

- Bearing race ①
Pitting/Damage → Replace.
- Bearings ②
Pitting/Damage → Replace.

NOTE: _____
 Always replace the bearing and race as a set.

Bearing Size:
 Upper 5/32 in
 Lower 5/32 in
Bearing Quantity:
 Upper 26 pcs.
 Lower 26 pcs.

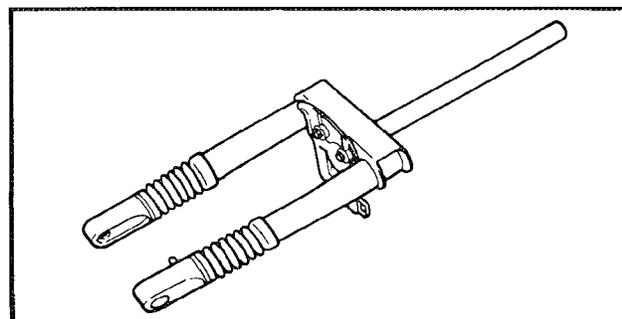
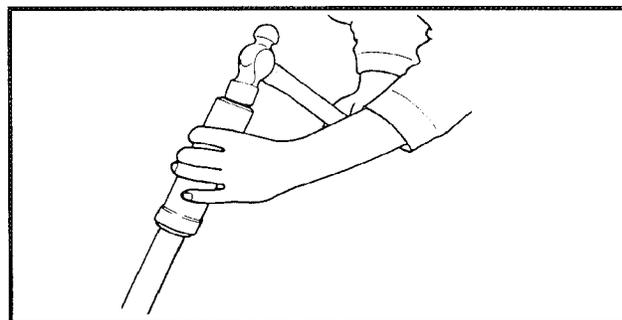


Bearing race replacement steps:

- Remove the bearing race by hitting it on several points.
- Set the bearing race.
- Drive in the bearing race evenly by hitting it on several points.

CAUTION: _____

- Unless the ball race is installed evenly, it will damage the frame or steering column.
- Do not hit the face of the ball race.

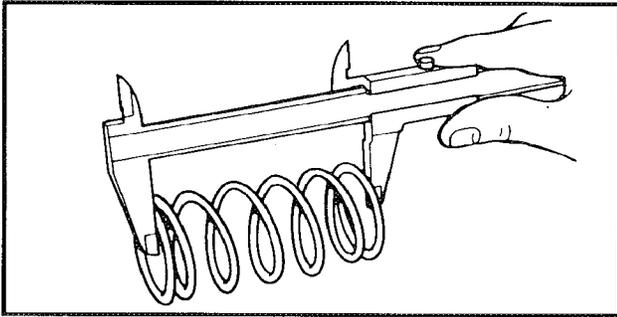


4. Inspect:

- Steering column
- Inner fork tube
Bends/Damage → Replace.

WARNING _____

Do not attempt to straighten a bent fork tube.



5. Measure:

- Fork spring free length
- Out of specification → Replace.



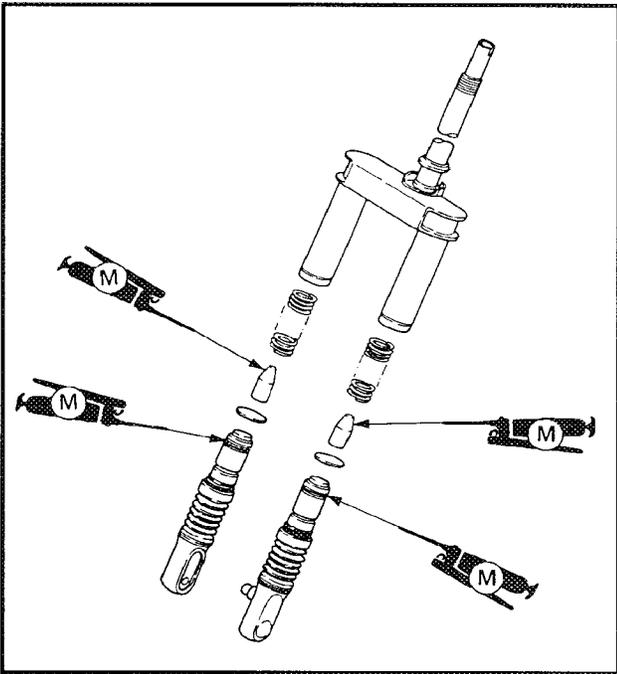
Fork Spring Free Length:
91.5 mm (3.60 in)
Limit: 87 mm (3.42 in)

ASSEMBLY AND INSTALLTION

Reverse the disassembly and removal steps. Note the following points.

⚠ WARNING

Proper cable and read routing is essential to issue safe scooter operation. Refer to "CHAPTER 2 – CABLE ROUTING".

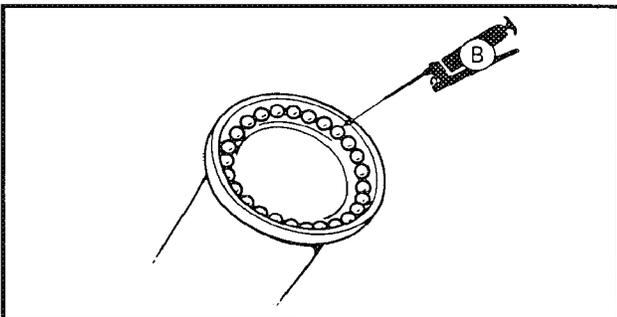


1. Apply:

- Molybdenum disulfide grease

2. Check:

- Front fork operation
- Unsmooth operation → Repair.



3. Apply:

- Wheel bearing grease
(to upper bearings and lower bearings.)

4. Install:
- Steering column
 - Upper ball race
 - Ring nut

CAUTION: _____

Hold the steering column until it is secured.

	Upper ball race (nut): 4 Nm (0.4 m • kg, 2.9 ft • lb)
---	--

5. Tighten:
- Ring nut ①

NOTE: _____

Set the torque wrench to the ring nut wrench ② so that they form a right angle.

	Ring nut wrench: YU-33975
---	------------------------------

	30 Nm (3.0 m • kg, 22 ft • lb)
---	--------------------------------

6. Install:
- Handlebar ①
 - Bolt ②
 - Nut

NOTE: _____

Match the bolt ② onto the steering column dent ③.

CAUTION: _____

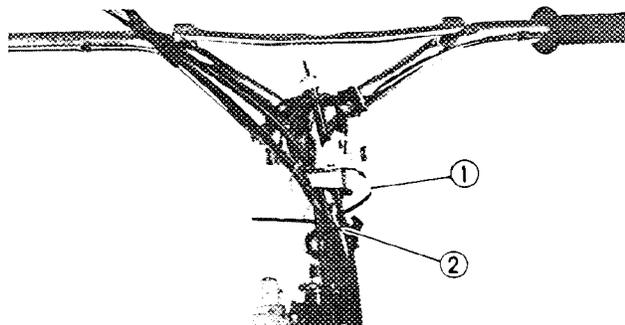
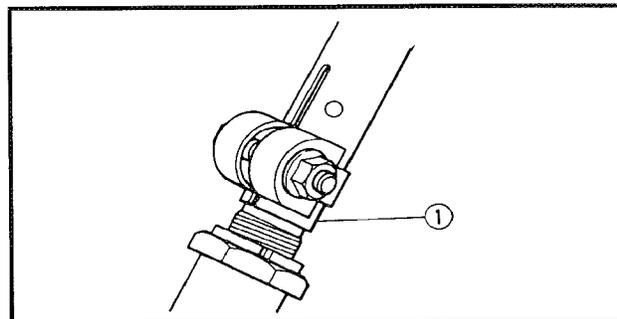
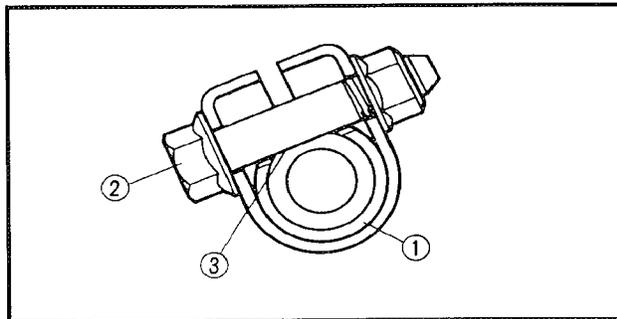
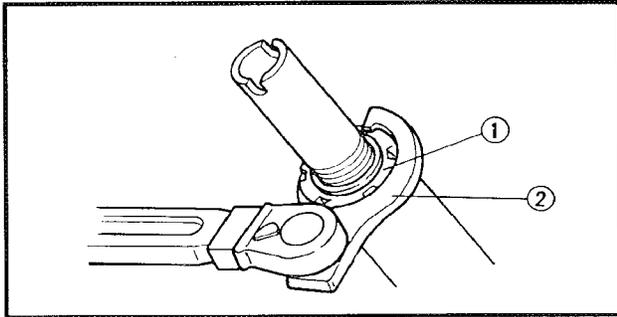
Before installing the handlebar, wipe the oil off the insertion portion using thinner, etc.

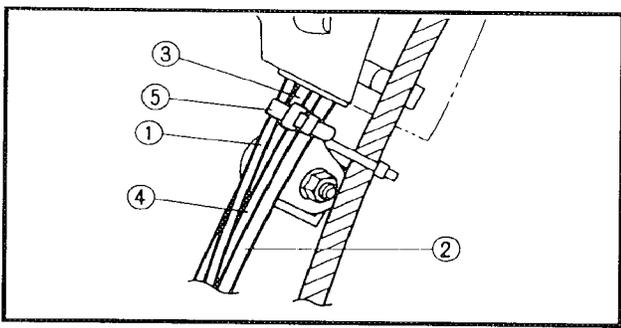
	Bolt ① (handlebar) 60 Nm (6.0 m • kg, 43 ft • lb)
---	--

7. Hook:
- Wire harness strap ①
8. Install:
- Band ②

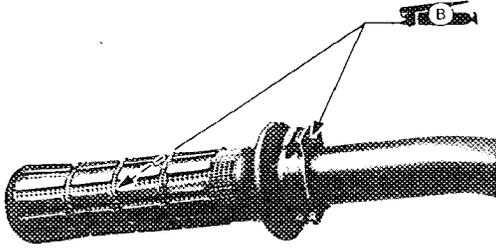
NOTE: _____

Clamp the wireharness.





9. Clamp
- Throttle cable ①
 - Speedometer cable ②
 - Rear brake cable ③
 - Front brake cable ④
- (to handlebar with the band ⑤.)



10. Apply:
- Lithium-soap base grease
- (to throttle cable end and handlebar right end.)

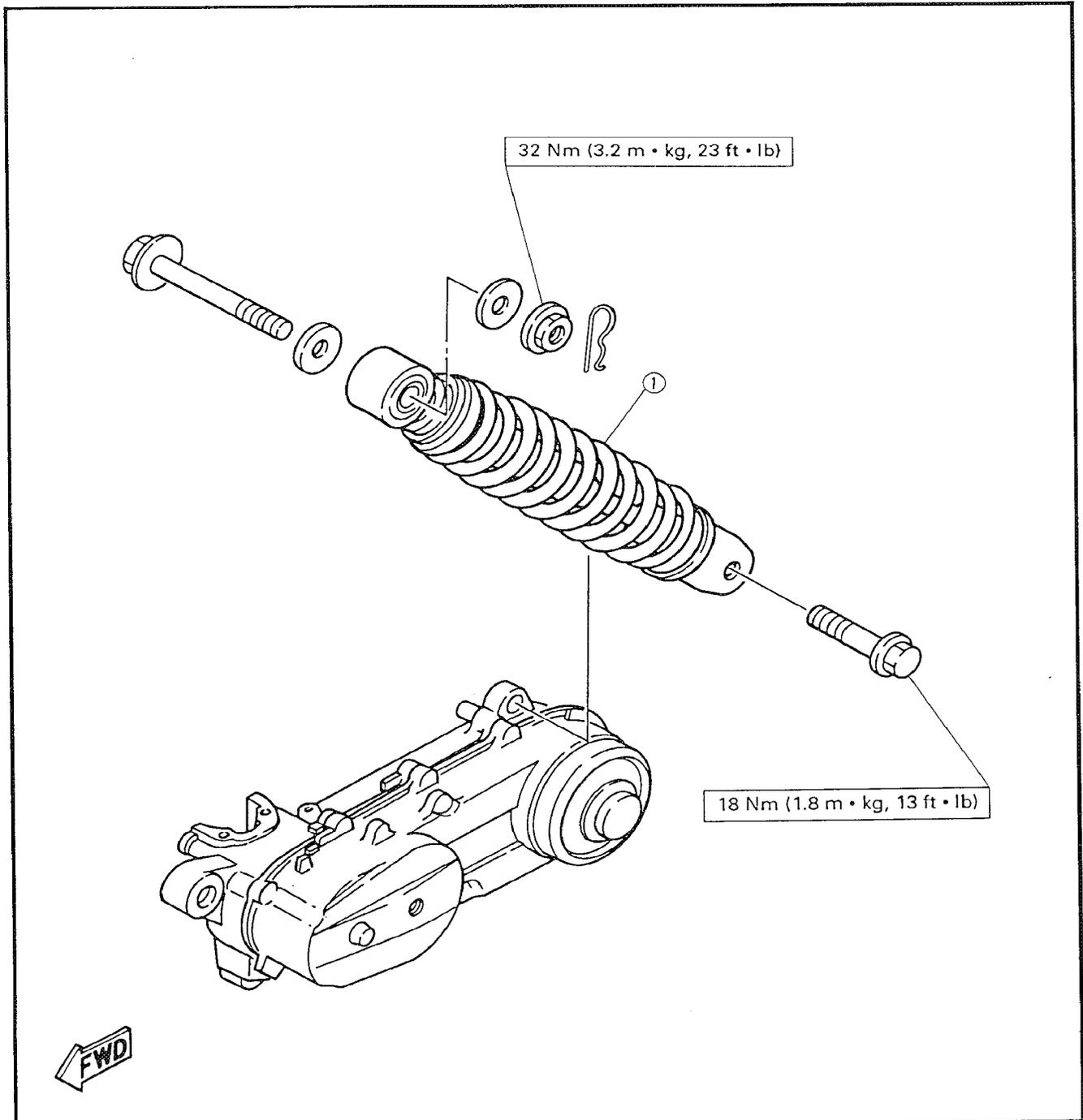
11. Adjust:
- Front brake lever free play
 - Rear brake lever free play
 - Throttle cable free play

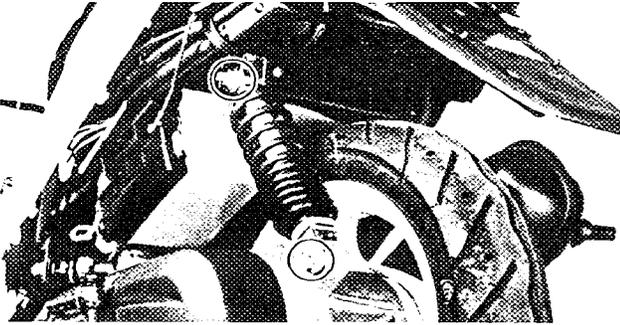
	Front Brake Lever Free Play: 10 ~ 20 mm (0.4 ~ 0.8 in)
	Rear Brake Lever Free Play: 10 ~ 20 mm (0.4 ~ 0.8 in)
	Throttle Cable Free Play: 1.5 ~ 3.5 mm (0.06 ~ 0.14 in)

Refer to "CHAPTER 3—FRONT BRAKE LEVER FREE PLAY CHECK, REAR BRAKE LEVER FREE PLAY CHECK and THROTTLE CABLE PLAY ADJUSTMENT" section.

REAR SHOCK ABSORBER

- ① Rear shock absorber





REMOVAL

1. Place the scooter on its centerstand.
2. Remove:
 - Rear shock absorber

INSPECTION

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

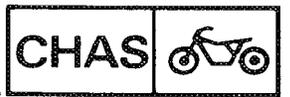


INSTALLATION

When installing the rear shock absorber, reverse the removal procedure. Note the following points.

1. Install:
 - Rear shock absorber

	Upper:
	32 Nm (3.2 m • kg, 23 ft • lb)
	Lower:
	18 Nm (1.8 m • kg, 13 ft • lb)



**CHAPTER 7.
ELECTRICAL**

CY50B CIRCUIT DIAGRAM F-13

ELECTRICAL COMPONENTS F-14

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 SIGNAL SYSTEM CHECK..... H-2

METER ASSEMBLY H-7

AUTO CHOKE H-8

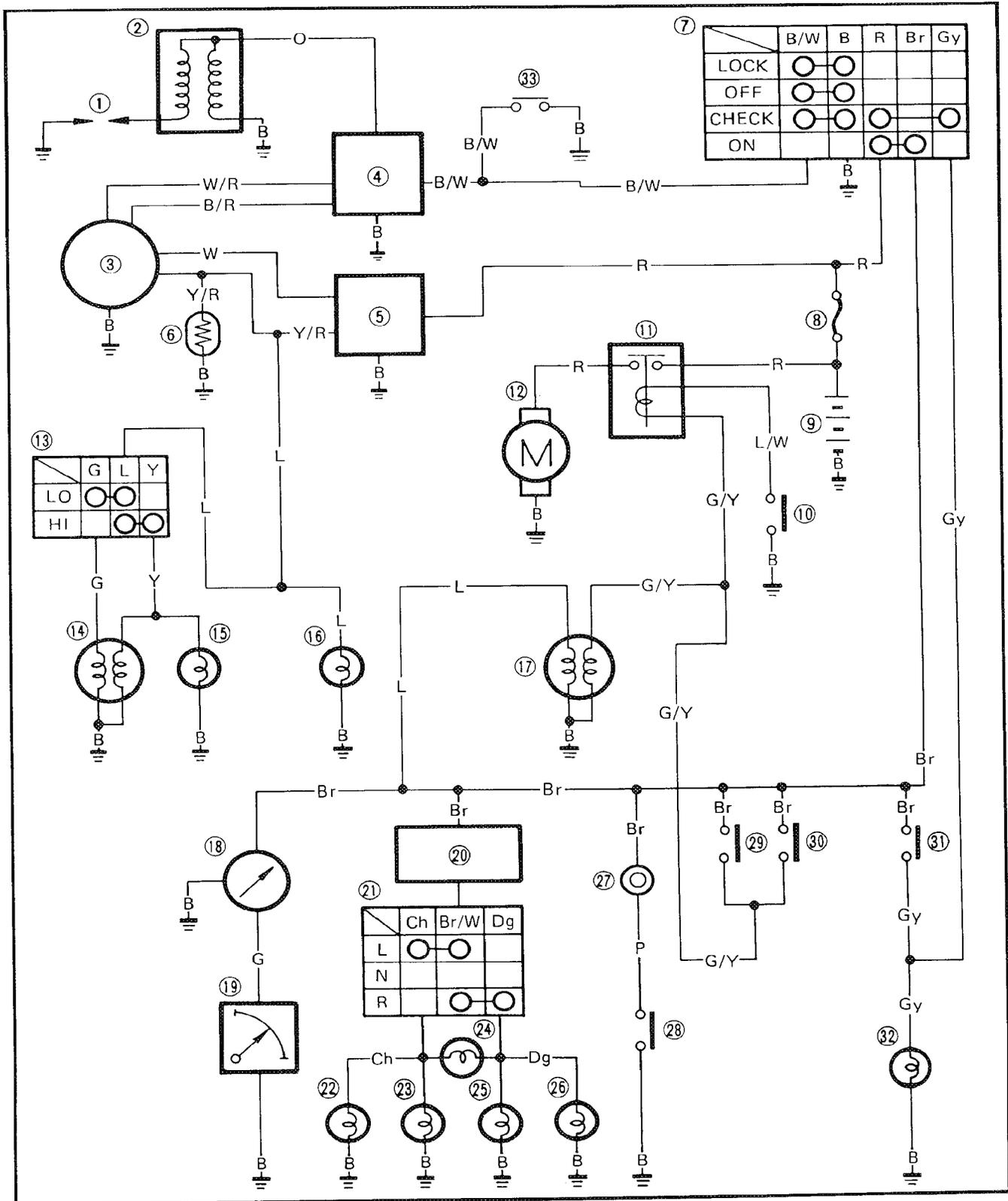
 CIRCUIT DIAGRAM..... H-8

 TROUBLESHOOTING H-9



ELECTRICAL

CY50B CIRCUIT DIAGRAM



- | | |
|---|---|
| <ul style="list-style-type: none"> ① Spark plug ② Ignition coil ③ C.D.I. magneto ④ C.D.I. unit ⑤ Rectifier/Regulator ⑥ Auto choke unit ⑦ Main switch ⑧ Fuse ⑨ Battery ⑩ Starter switch ⑪ Starter relay ⑫ Starter motor ⑬ "LIGHTS" (dimmer) switch ⑭ Headlight ⑮ "HIGH BEAM" indicator light ⑯ Meter light ⑰ Tail/Brake light | <ul style="list-style-type: none"> ⑱ Fuel meter ⑲ Fuel sender ⑳ Flasher relay ㉑ "TURN" switch ㉒ Left flasher light (front) ㉓ Left flasher light (rear) ㉔ "TURN" indicator light ㉕ Right flasher light (front) ㉖ Right flasher light (rear) ㉗ Horn ㉘ "HORN" switch ㉙ Front brake switch ㉚ Rear brake switch ㉛ Oil level gauge ㉜ "OIL" indicator light ㉝ Engine "stop" switch |
|---|---|

COLOR CODE

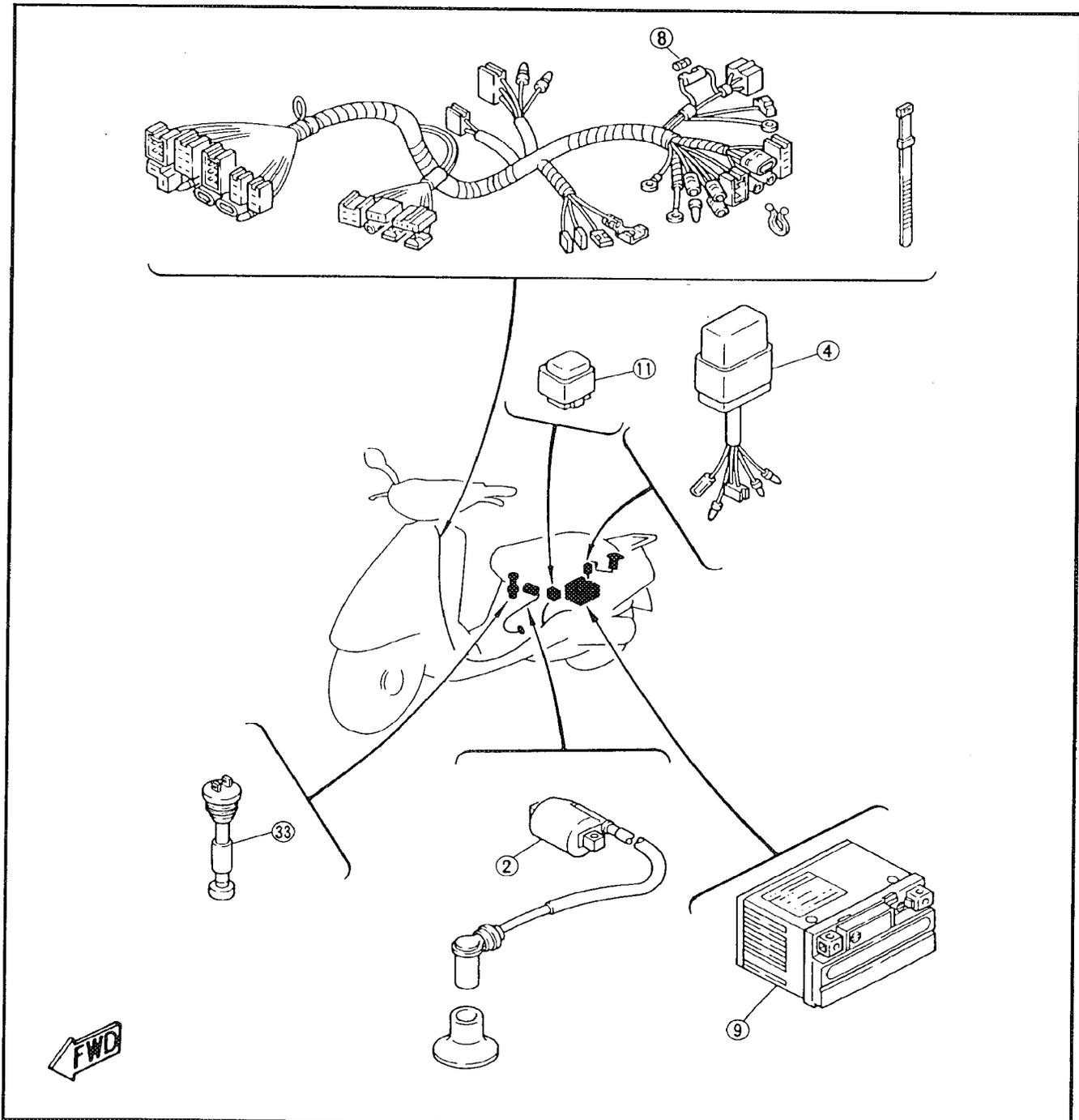
R	Red	P	Pink
B	Black	L	Blue
W	White	Y/R	Yellow/Red
Y	Yellow	L/W	Blue/White
Br	Brown	G/Y	Green/Yellow
Gy	Gray	B/W	Black/White
O	Orange	B/R	Black/Red
Ch	Chocolate	W/R	White/Red
Dg	Dark green	Br/W	Brown/White
G	Green		



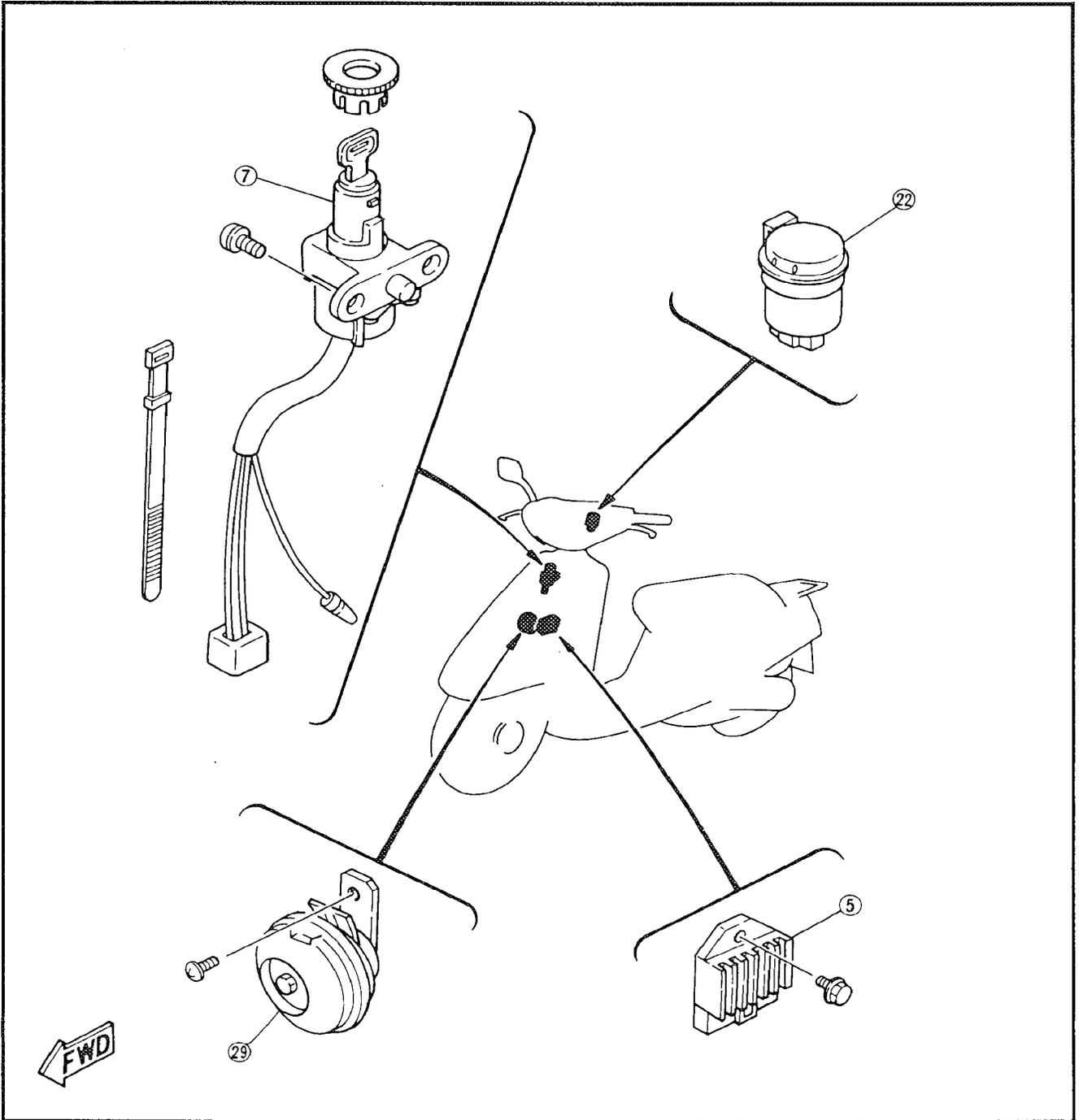
ELECTRICAL COMPONENTS

- ② Ignition coil
- ④ C.D.I. unit
- ⑧ Fuse
- ⑨ Battery
- ⑪ Starter relay
- ③③ Oil level gauge

A	BATTERY CAPACITY: 12V, 4AH SPECIFIC GRAVITY: 1.32
B	IGNITION COIL RESISTANCE PRIMARY: 0.56 ~ 0.84Ω at 20°C (68°F) SECONDARY: 5.68 ~ 8.52 kΩ at 20°C (68°F)



- ⑤ Rectifier/Regulator
- ⑦ Main switch
- ②② Flasher relay
- ②⑨ Horn



CHECKING OF CONNECTIONS

Dealing with stains, rust, moisture, etc. on the connector.

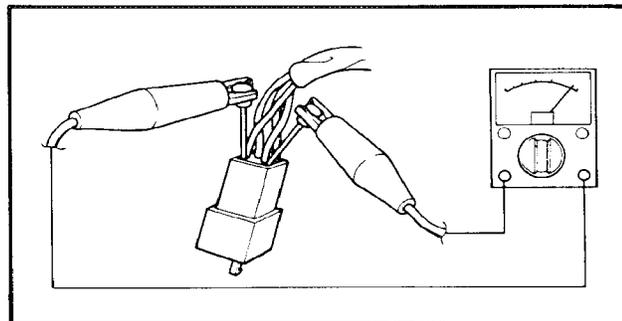
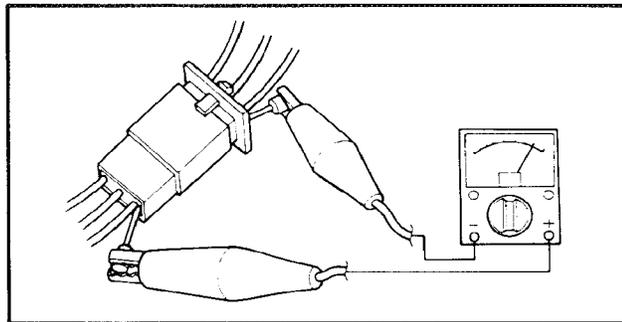
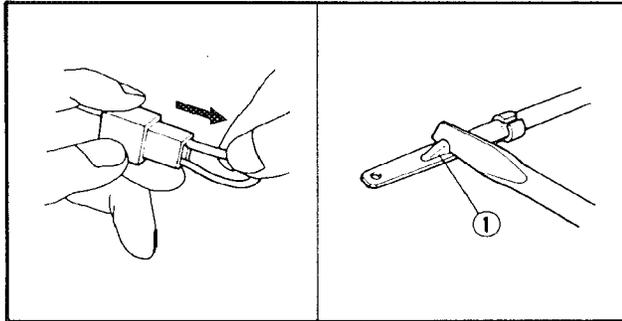
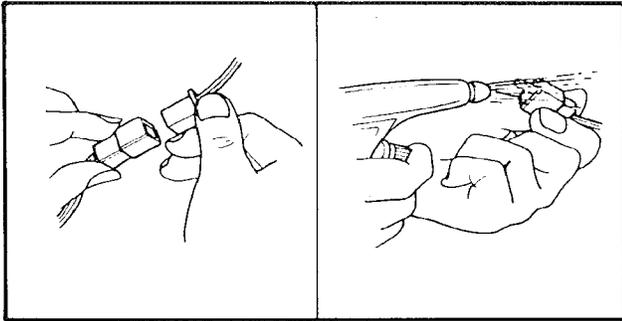
1. Disconnect:
 - Connector
2. Dry each terminal by an air blower.

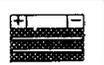
3. Connect and disconnect the connector two or three times.
4. Pull the lead to check that it will not come off.
5. If the terminal comes off, bend up the pin ① and reinsert the terminal into connector.

6. Connect:
 - Connector
7. Check for continuity by a tester.

NOTE: _____

- If there is no continuity, clean the terminals.
- Be sure to perform the above steps 1 to 7 when checking the wire harness.
- When replacing the C.D.I. unit, be sure to check its connector.
- For a field remedy, use a contact revitalizer available on the market.
- Use the tester on the connector as shown.





CHECKING OF SWITCHES

Check the switches for the continuity between the terminal to determine correct connection.

Read the following for switch inspection.

SWITCH CONNECTION AS SHOWN IN MANUAL

The manual contains a connection chart as shown left showing the terminal connections of the switches (e.g., main switch, handlebar switch, bracket switch, lighting switch etc.)

The extreme left column indicates the switch positions and the top line indicates the colors of leads connected with the terminals in the switch component.

"○—○" indicates the terminals between which there is a continuity of electricity; i.e., a closed circuit at the respective switch positions.

	B	B/W	R	Br	L/W	L/R
ON			○—○		○—○	
OFF	○—○					
LOCK	○—○					
P	○—○		○—○			○—○

In this chart:

"R and Br" and "L/W and L/R" are continuous with the "ON" switch position.

"B and B/W" is continuous with the "OFF" switch position.

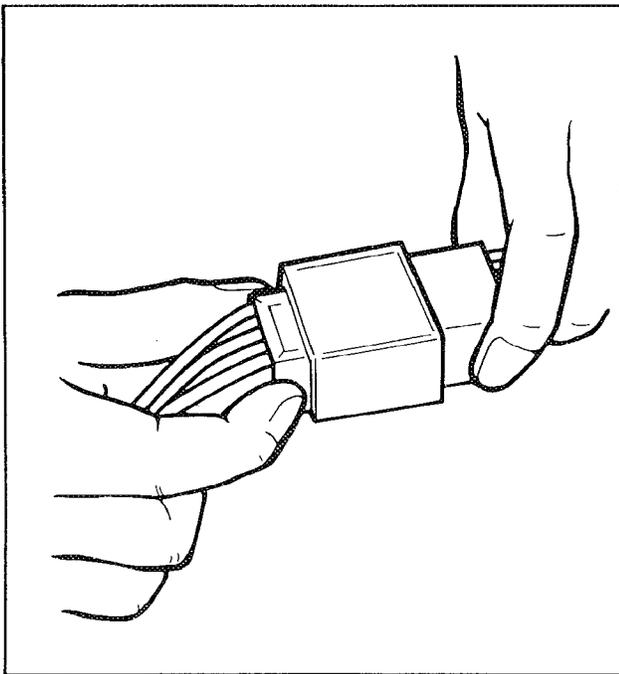
"B and B/W" is continuous with the "LOCK" switch position.

"B and B/W" and "R and L/R" are continuous with the "P" switch position.

CHECKING SWITCH FOR TERMINAL CONNECTION

Before checking the switch, refer to the connection chart as shown above and check for the correct terminal connection (closed circuit) by the color combination.

To explain how to check the switch, the main switch taken for example in the following.



1. Disconnect the main switch coupler from the wireharness.

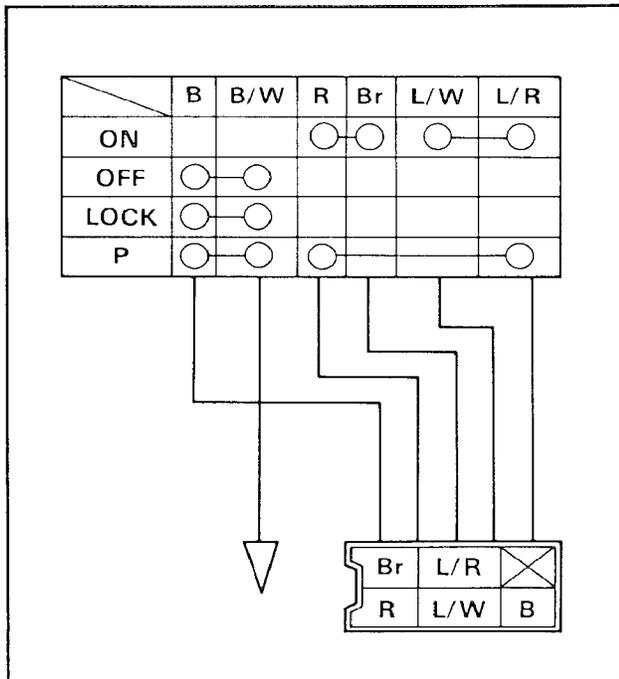
CAUTION:

Never disconnect the main switch coupler by pulling the leads. Otherwise, leads may be pulled off the terminals inside the coupler.

2. Inspect whether any lead is off the terminal inside the coupler. If it is, repair it.

NOTE:

If the coupler is clogged with mud or dust, blow it off by compressed air.



3. Use the connection chart to check the color combination for continuity (a closed circuit). In this example, the continuity is as follows.

“R and Br” and L/W and L/R” are continuous with the “ON” switch position.

“B and B/W” is continuous with the “OFF” switch position.

“B and B/W” is continuous with the “LOCK” switch position.

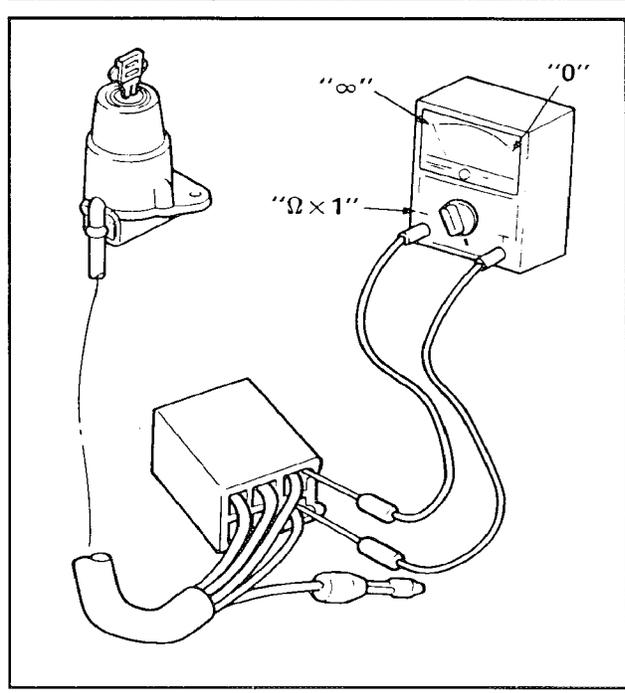
“B and B/W” and “R and L/R” are continuous with the “P” switch position.

Please note that there is no continuity (an open circuit) at all for the color combinations other than the above.

4. Check the switch component for the continuity between “R and Br”.

Checking steps:

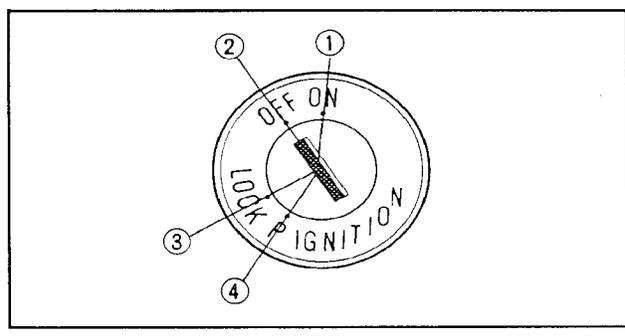
- Turn the switch key to the “ON”, “OFF”, “LOCK”, and “P” several times.
- Set the pocket tester selector to the “Ω x 1”.
- Connect the tester (+) lead to the “R” lead terminal in the coupler and the (-) lead to the “Br” lead terminal.



NOTE: _____
 Use thin probes for checking the continuity. Otherwise, the probes may contact other terminals inside the coupler.

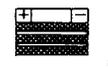
- Check the continuity between "R" and "Br" at the respective switch position of "ON" ①, "OFF" ②, "LOCK" ③, and "P" ④. There must be continuity (the tester indicating "0") at the "ON" switch position, and there must be no continuity (the tester indicating "∞") at "OFF", "LOCK", or "P". There is something wrong between "R" and "Br" if there is no continuity at the "ON" position or if there is some continuity either at the "OFF" or "LOCK" or "P".

NOTE: _____
 Check the switch for continuity several times.



5. Next go on to checking of the continuity between "B and B/W", "L/W and L/R", and "R and L/R" at the respective switch positions, as in the same manner mentioned above.

6. If there is something wrong with any one of the combinations, replace the switch component.



CHECKING OF BULBS

(FOR HEADLIGHT, TAIL/BRAKE LIGHT, FLASHER LIGHT, METER LIGHT, ETC.)

Check the bulb terminal continuity for the condition for the bulb.

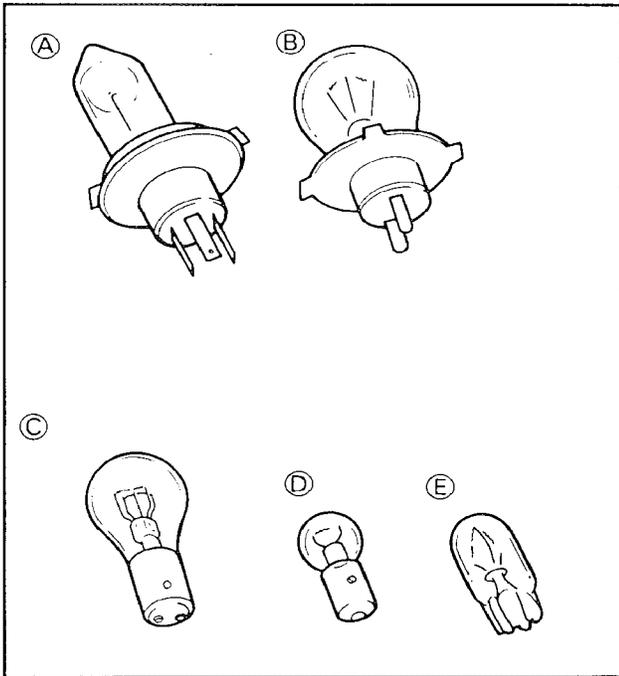
KINDS OF BULBS

The bulbs used in the motorcycle are classified as shown left by the shape of the bulb socket.

(A) and (B) are mainly used for the headlight.

(C) is mainly used for the flasher light and tail/brake light.

(D) and (E) are mainly used for the meter light and other indicator lights.



CHECKING BULB CONDITION

1. Remove the bulb.

NOTE:

- Bulbs of the (A) and (B) type uses a bulb holder. Remove the bulb holder before removing the bulb itself. Most of the bulb holders for this type can be removed by turning them counterclockwise.
- Most of the bulbs (C) and (D) type can be removed from the bulb sockets by pushing and turning them counterclockwise.
- Bulbs of the (E) type can be removed from the bulb sockets by simply pulling them out.

CAUTION:

Be sure to hold the socket firmly when removing the bulb. Never pull the lead. Otherwise, the lead may be pulled off the terminal in the coupler.

⚠ WARNING

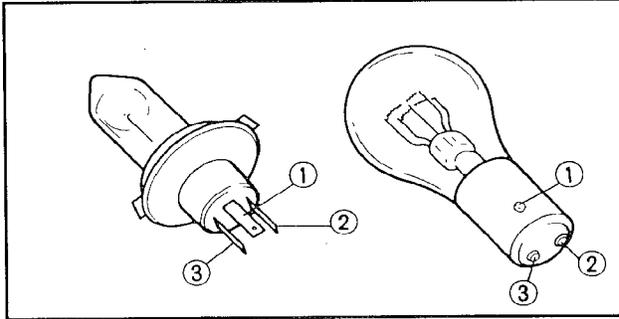
Keep flammable products and your hands away from the headlight bulb while it is on. It will be hot. Do not touch the bulb until it cools down.



2. Check the bulb terminals for continuity.

Checking steps:

- Set the pocket tester selector to the " $\Omega \times 1$ ".
- Connect the tester leads to the respective bulb terminals. Take for example a 3-terminal bulb as shown left. First check the continuity between the ① and ② terminals by connecting the tester (+) lead to the ① terminal and the tester (-) lead to the ② terminal. Then check the continuity between the ① and ③ terminals by connecting the tester (+) lead still to the ① terminal and the tester (-) lead to the ③ terminal. If the tester shows " ∞ " in either case, replace the bulb.



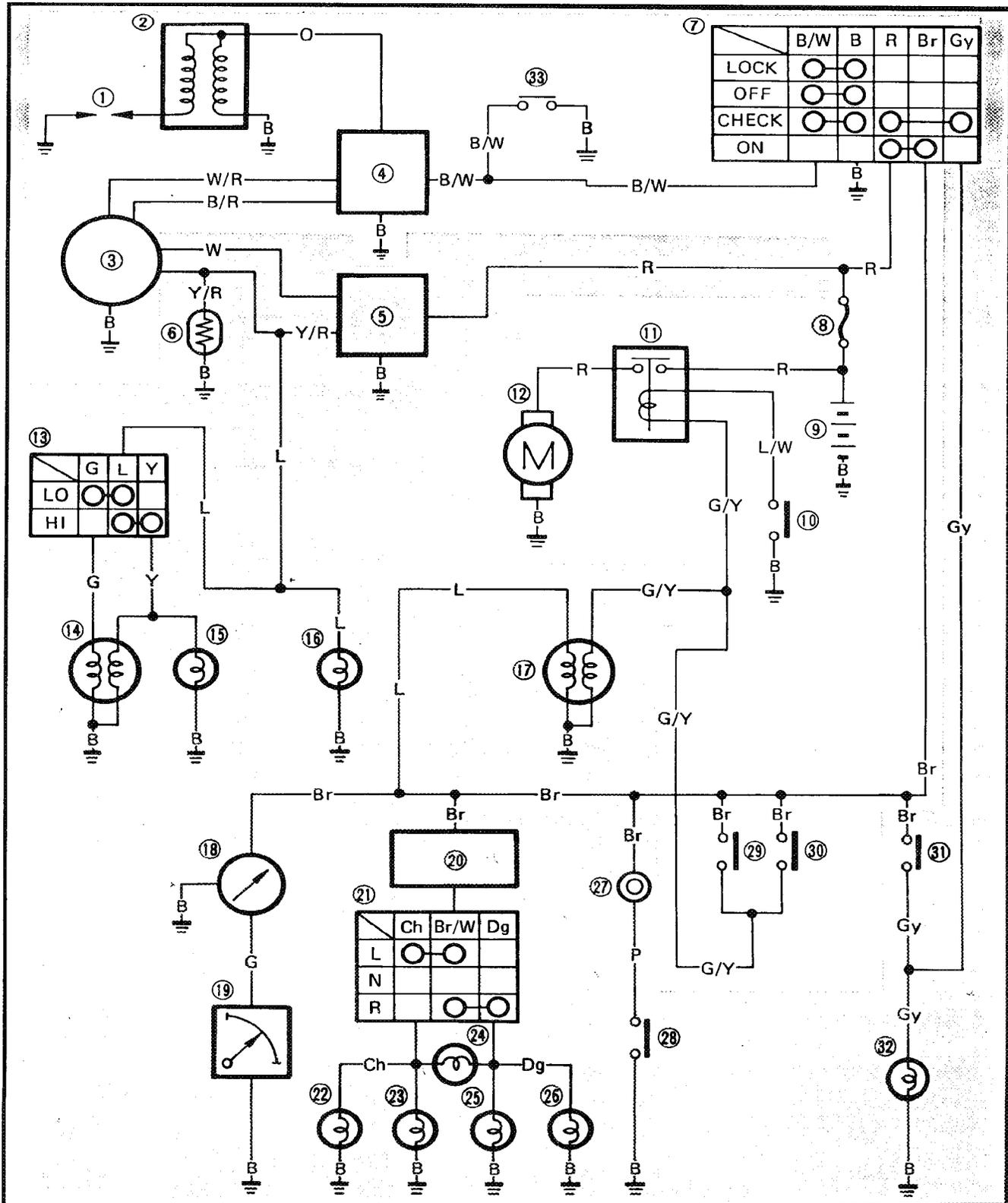
3. Check the bulb socket by installing a proven bulb to it. As in the checking of bulbs, connect the pocket tester leads to the respective leads of the socket and check for continuity in the same manner as mentioned above.



IGNITION AND STARTING SYSTEM

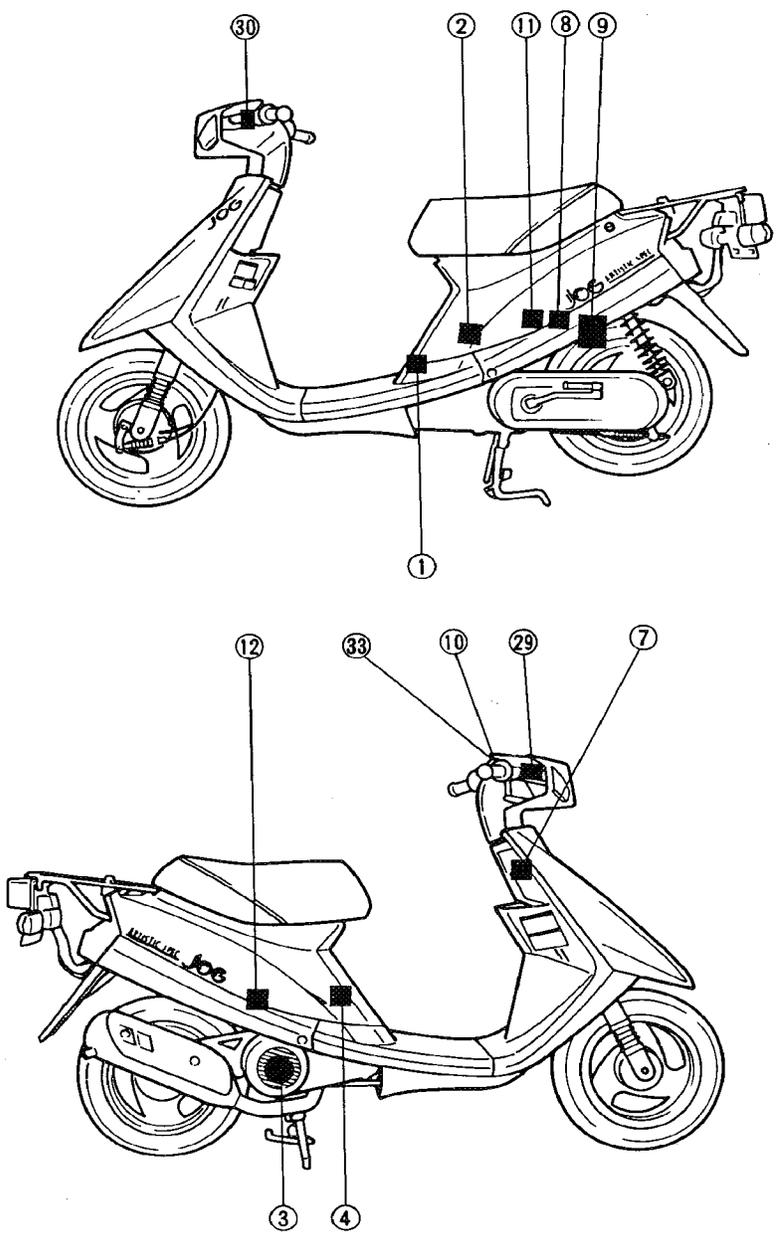
CIRCUIT DIAGRAM

Below circuit diagram shows ignition and starter circuit.



NOTE:
For the color codes see page 7-2.

- ① Spark plug
- ② Ignition coil
- ③ C.D.I. magneto
- ④ C.D.I. unit
- ⑦ Main switch
- ⑧ Fuse
- ⑨ Battery
- ⑩ Starter switch
- ⑪ Starter relay
- ⑫ Starter motor
- ⑲ Front brake switch
- ⑳ Rear brake switch
- ㉓ Engine "stop" switch





QUICK REFERENCE CHART

Inspection parts	Trouble mode			Erroneous operation of starter motor				Malfunction during operation			
	1	2	3	4	5	6	7	8	9	10	11
[A] BATTERY	1	1	1								
[B] FUSE	2										
[C] STARTER MOTOR	3	2	2								
[D] STARTER RELAY	4	3									
[E] MAIN SWITCH	5			6	6					1	
[F] BRAKE SWITCH	6										
[G] STARTER SWITCH	7		1								
[H] SPARK PLUG				1	1	1	1	1			2
[I] SPARK PLUG CAP				2	2	2	2	2	1		1
[J] IGNITION COIL				3	3	3	3	3	2		3
[K] SOURCE COIL				4	4	4	4				
[L] PICKUP COIL				5	5	5	5				
[M] "ENGINE STOP" SWITCH				6			6				
[N] WIRE HARNESS				7	7	7	7		3	1	2
[O] CDI UNIT				8	8	8	8		4		

NOTE:

- [A] ~ [M] & [O] indicates the location of the parts-connectors for checking.
- Use the following special tools in this troubleshooting.

Pocket Tester:
YU-03112

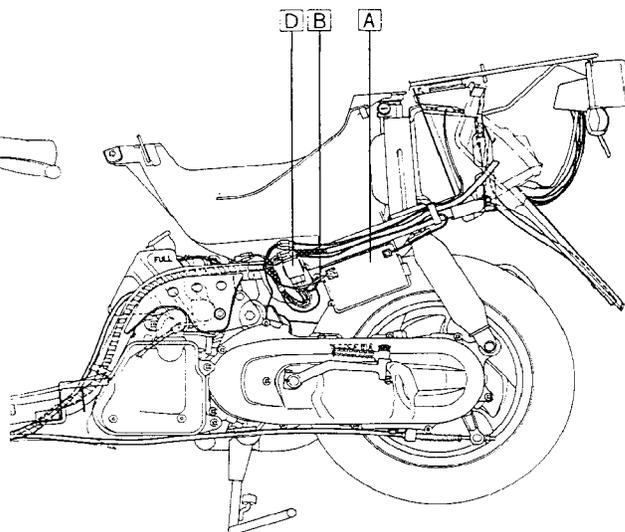
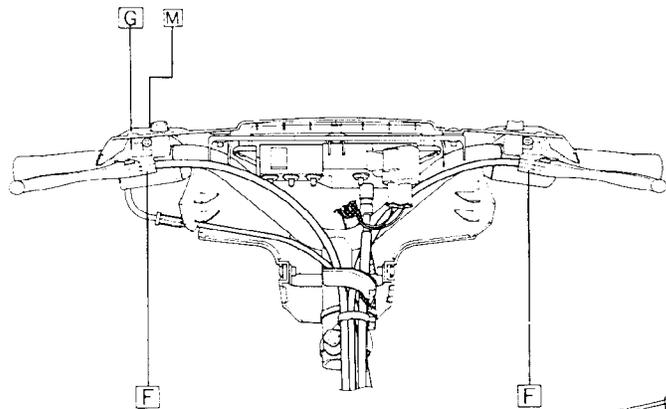
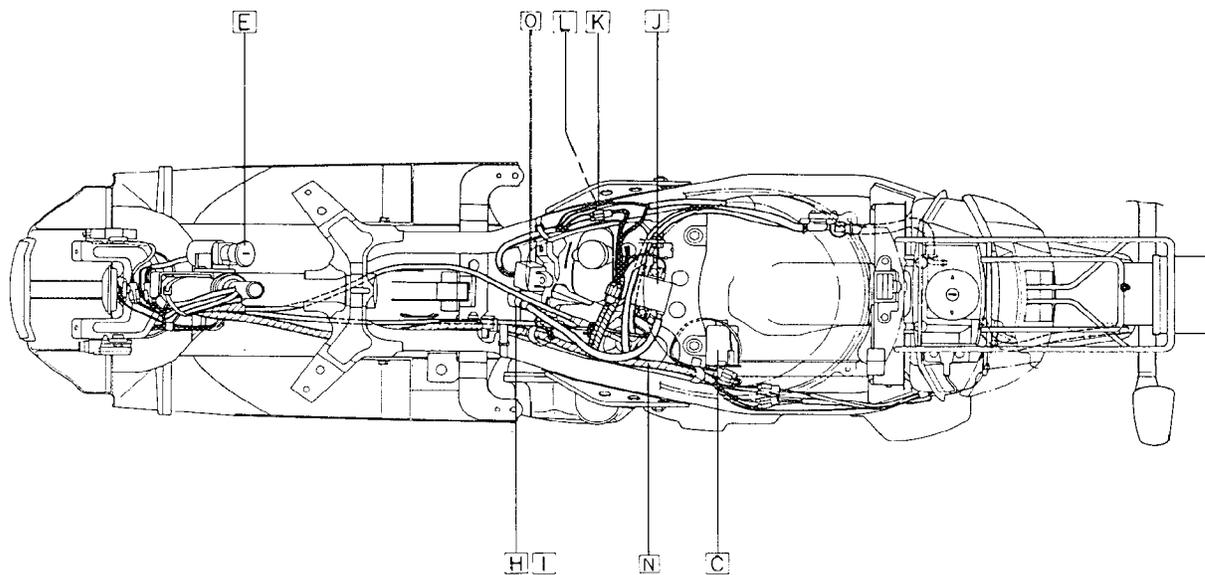
Dynamic Spark Tester:
YM-34487

HOW TO USE CHART:

- Step 1. Look for an appropriate trouble mode from the scooter phenomenon.
- Step 2. Proceed to checking in the ascending order of the numbers.
- Step 3. Look for location by reference to the "LOCATION OF PARTS-CONNECTORS". (P. 7-14)
- Step 4. Go to further details of checking. (P. 7-3 ~ 7-28).



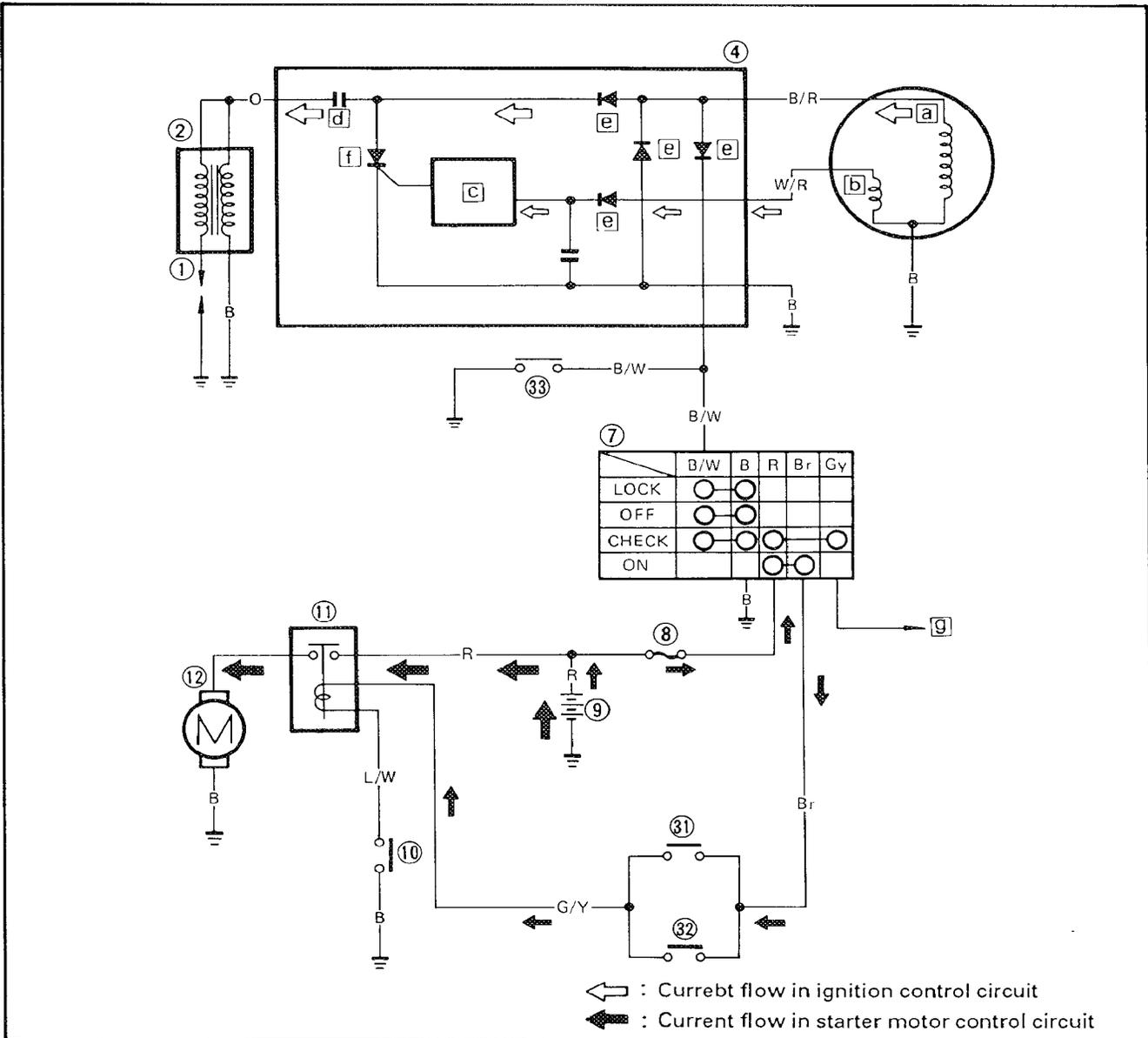
LOCATION OF PARTS CONNECTORS

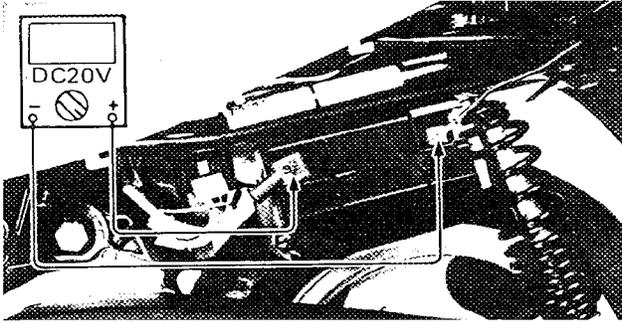




IGNITION AND STARTING CIRCUIT SYSTEM

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> ① Spark plug ② Ignition coil ④ CDI unit ⑦ Main switch ⑧ Fuse ⑨ Battery | <ul style="list-style-type: none"> ⑩ Starter switch ⑪ Starter relay ⑫ Starter motor ③① Front brake switch ③② Rear brake switch ③③ Engine "stop" switch | <ul style="list-style-type: none"> a Source coil b Pickup coil c Wave-shap shaping circuit d Condenser e Diode f SCR g To oil level switch |
|---|--|---|





INSPECTION PARTS

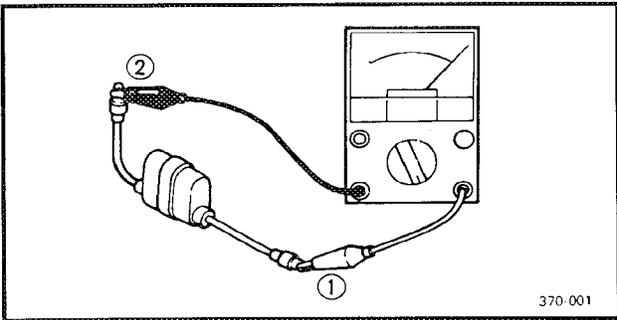
A Battery Inspection

1. Inspect:
 - Battery terminal
 - Battery voltage

	Tester lead (Red)	Tester lead (Black)	Battery voltage	Range
	Positive	Negative	12 ~ 14V	DC20V

Out of specification → Recharge battery or replace the battery.

Refer to the "BATTERY INSPECTION" section in the CHAPTER 3.



B Fuse Inspection

1. Inspect:
 - Fuse for continuity
 - Fuse holder

	Tester lead (Red)	Tester lead (Black)	Continuity	Range
	Fuse holder lead ①	Fuse holder lead ②	Continuous	$\Omega \times 1$

Non-continuous → Replace fuse or fuse holder.

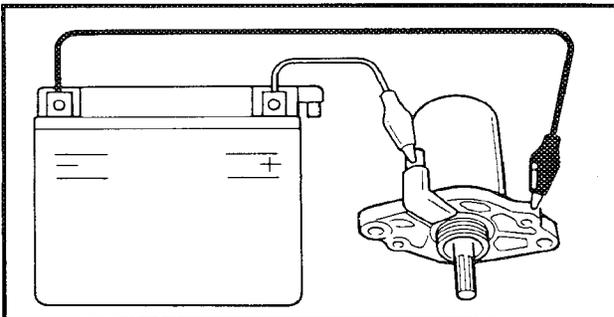
Loose terminal → Replace fuse or fuse holder.

**Amperage for Individual:
7A**

Refer to the "FUSE INSPECTION" section in the CHAPTER 3.

C Starter Motor Inspection

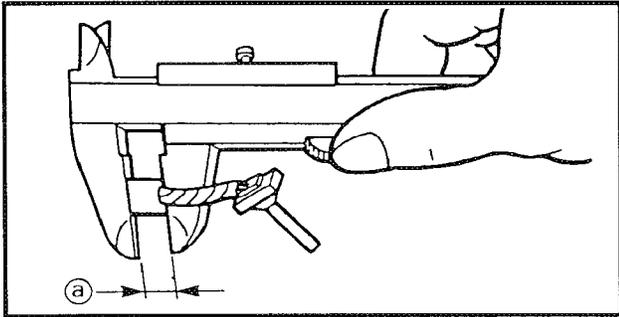
1. Connect 12V battery to the starter motor terminals as shown.



NOTE: _____
Use full charged battery.

CAUTION: _____
Do not run the starter motor for more than a few seconds.

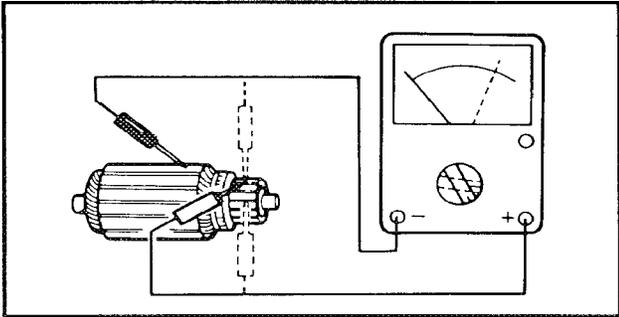
Starter motor does not run → Go on to steps 2 to 6.



2. Measure:
- Brush length (each) (a)

 **Minimum Brush Length:**
 0.9 mm (0.035 in)/YAMAHA,
 1.25 mm (0.10 in)/NIPPON DENSO

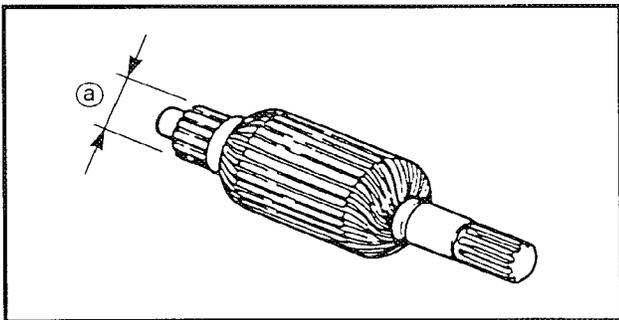
Out of specification → Replace starter motor assembly.
 Damaged surface of contact with commutator → Repair.



3. Inspect:
- Commutator condition
 Damaged, worn, and bruned surface of commutator → Replace starter motor assembly.
4. Inspect:
- Armature coil for continuity.

	Tester lead (Red)	Tester lead (Black)	Continuity	Range
	Commutator	Commutator	Continuous	$\Omega \times 1$
	Commutator	Iron core	Non-continuous	$\Omega \times 1k$

Bad condition → Replace starter motor assembly.



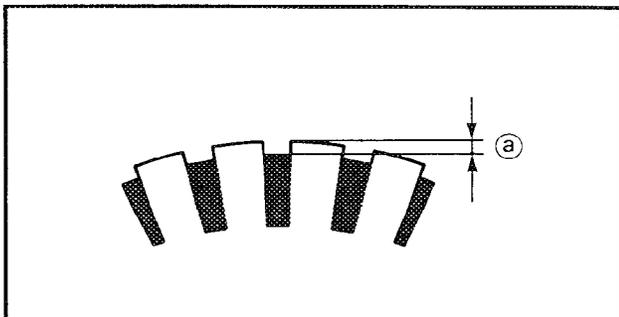
5. Measure:
- Commutator diameter (a)

 **Outside Diameter Wear Limit:**
 14.8 mm (0.58 in)/YAMAHA
 14.5 mm (0.57 in)/NIPPON DENSO

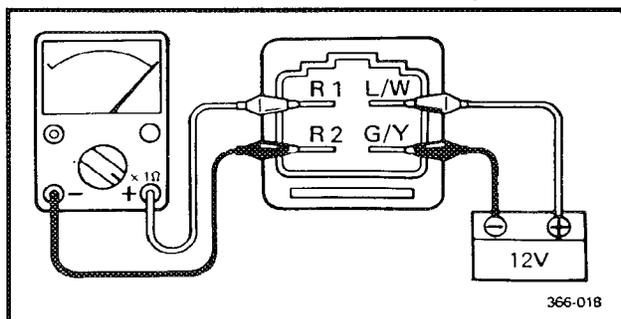
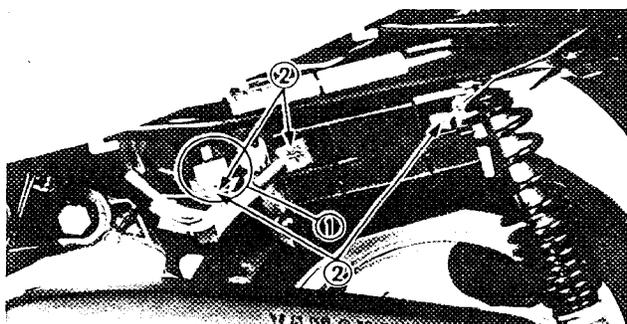
Out of specification → Replace starter motor assembly.

6. Measure:
- Mica undercut (a):
 Out of specification → Scrape mica using a hacksaw blade.

 **Mica Undercut (a):**
 1.15 mm (0.045 in)/YAMAHA
 0.9 ~ 1.2 mm (0.035 ~ 0.047 in)/NIPPON DENSO



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



D Starter Relay Inspection

1. Inspect:

- Starter relay ①
- Use the jumper leads ② .
- Starter motor does not run → Go on to steps 2 and 3.

Battery Positive Terminal → Green/Yellow.
Battery Negative Terminal → Blue/White Terminal.

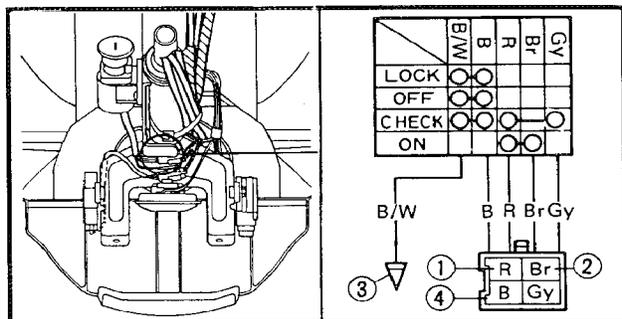
2. Disconnect:

- Starter relay leads and connector

3. Inspect:

- Starter relay for continuity.

	Range: Ω x 1	Copuller Terminals	Voltage applied	Voltage not applied
	Tester lead (Red)	R1	Continuity	No continuity
	Tester lead (Black)	R2		



E Main Switch Inspection

1. Inspect:

- Flasher operation
- Flasher does not move → Go on to steps 2 and 3.

2. Disconnect:

- Main switch coupler

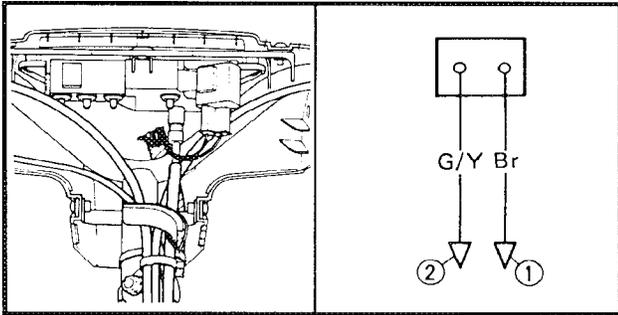
3. Inspect:

- Main switch for continuity.

	Tester lead (Red)	Tester lead (Black)	Conti- nuity	Range
	Terminal (Red ①)	Terminal (Brown ②)	Conti- nuous	Ω x 1
	Terminal (Black/ White ③)	Terminal (Black ④)	Conti- nuous	Ω x 1

Refer to the "CHECKING OF SWITCHES" section.

Bad condition → Replace main switch.



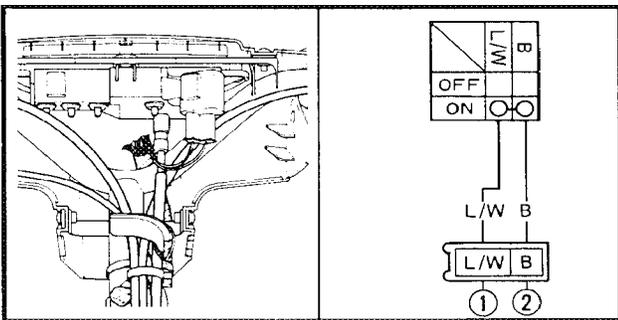
F Brake Switch Inspection

1. Disconnect:
 - Brake switch connector
2. Inspection:
 - Brake switch for continuity.

	Tester lead (Red)	Tester lead (Black)	Continuity	Range
	Terminal (Brown ①)	Terminal (Green/Yellow ②)	Continuous	$\Omega \times 1$

Refer to the "CHECKING OF SWITCHES" section.

Bad condition → Replace brake switch.



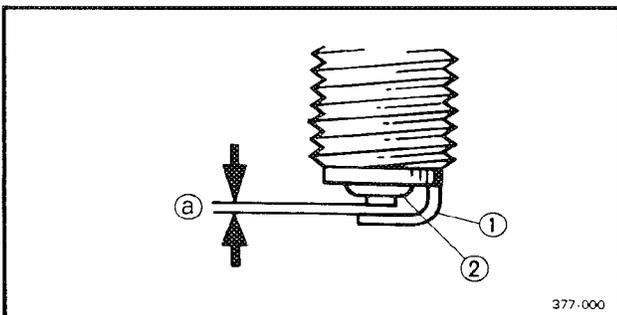
G Starter Switch Inspection

1. Disconnect:
 - Starter switch connector
2. Inspection:
 - Starter switch for continuity.

	Tester lead (Red)	Tester lead (Black)	Continuity	Range
	Terminal (Blue/White ①)	Terminal (Black ②)	Continuous	$\Omega \times 1$

Refer to the "CHECKING OF SWITCHES" section.

Bad condition → Replace handlebar switch (right)

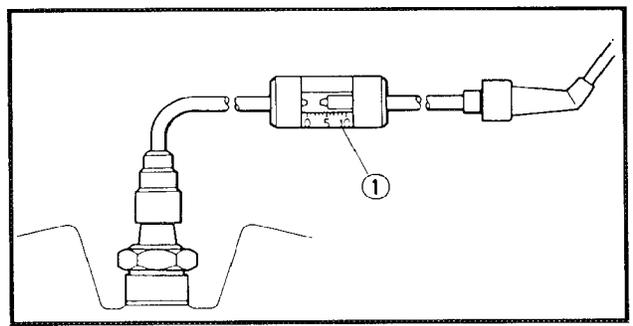


H Spark Plug Inspection

1. Inspect:
 - Electrode ①
Wear/Damage → Replace spark plug.
 - Insulator ②
Abnormal color → Replace spark plug.
2. Measure:
 - Plug gap ②
Use a Wire Gauge or Feeler Gauge.

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

Out of specification → Replace spark plug.
Refer to the "SPARK PLUG INSPECTION" section in the CHAPTER 3.



3. Measure:
• Spark gap
Use a Dynamic Spark Tester ①.

 **Minimum Spark Gap:**
6 mm (0.24 in)

Meets specification → Replace spark plug.

 **Dynamic Spark Tester:**
YM-34487

Meets specification → Replace spark plug.

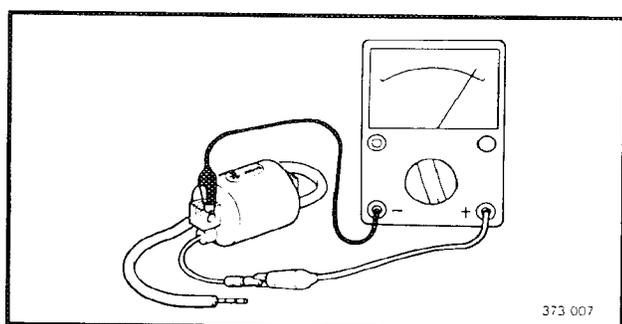
Spark Plug Cap Inspection

1. Inspect:
• Spark plug cap resistance

 **Spark Plug Cap Resistance:**
4 ~ 6Ω at 20°C (68°F)

Out of specification → Replace spark plug cap.

NOTE: _____
Check the spark plug lead for any fault when fitting the spark plug cap to it. If any fault is found, cut the spark plug lead 5 mm (0.197 in) as its tip.



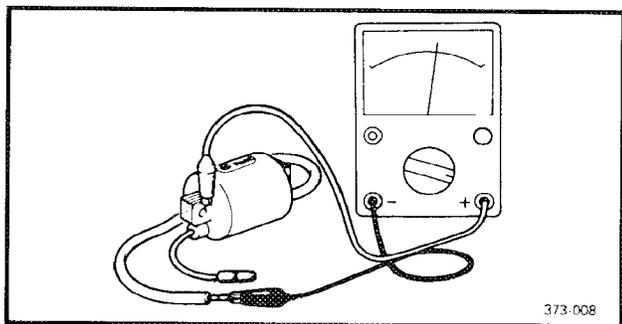
373-007

J Ignition Coil Inspection

1. Disconnect:
 - Primary coil connector
2. Inspect:
 - Primary coil resistance

	Tester lead (Red)	Tester lead (Black)	Specified resistance	Range
	Terminal (Orange)	Terminal (Black)	0.56 ~ 0.84Ω at 20°C (68°F)	Ω x 1

Out of specification → Replace ignition coil.



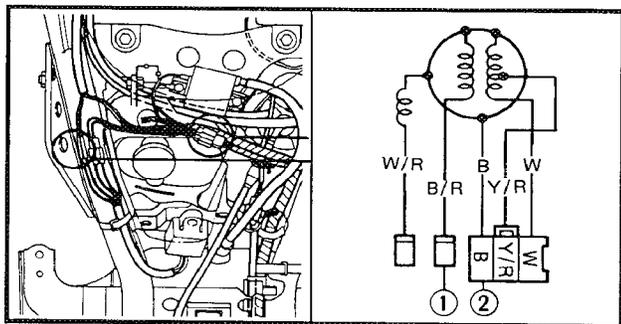
373-008

3. Inspect:

- Secondary coil resistance

	Tester lead (Red)	Tester lead (Black)	Specified resistance	Range
	Spark plug lead	Terminal (Black)	5.68 ~ 8.52Ω at 20°C (68°F)	Ω x 1k

Out of specification → Replace ignition coil.

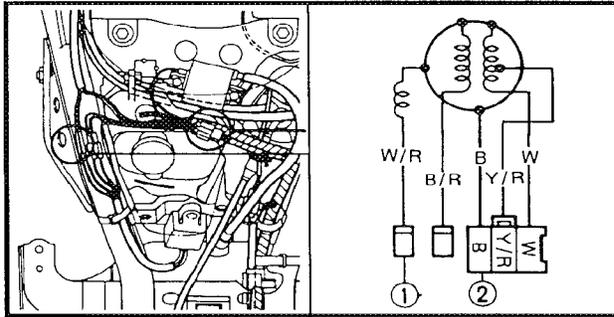


K Source Coil Resistance Inspection

1. Disconnect:
 - Source coil connector
2. Inspect:
 - Source coil resistance

	Tester lead (Red)	Tester lead (Black)	Specified resistance	Range
	Terminal (Black/Red ①)	Terminal (Black ②)	640 ~ 960 Ω at 20°C (68°F)	Ω x 100

Out of specification → Replace source coil.

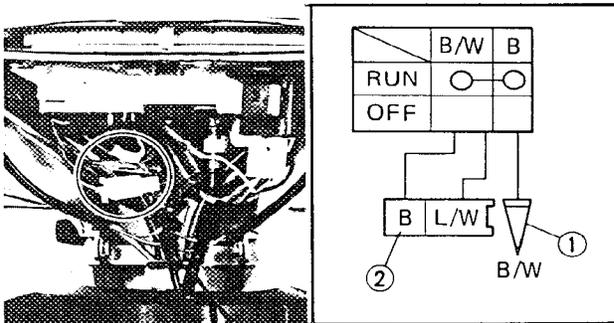


L Pickup Coil Resistance Inspection

1. Disconnect:
 - Pickup coil connector
2. Inspect:
 - Pickup coil

	Tester lead (Red)	Tester lead (Black)	Specified resistance	Tester selection
	Terminal (White/Red ①)	Terminal (Black ②)	400 ~ 600 Ω at 20°C (68°F)	Ω x 100

Out of specification → Replace pickup coil.

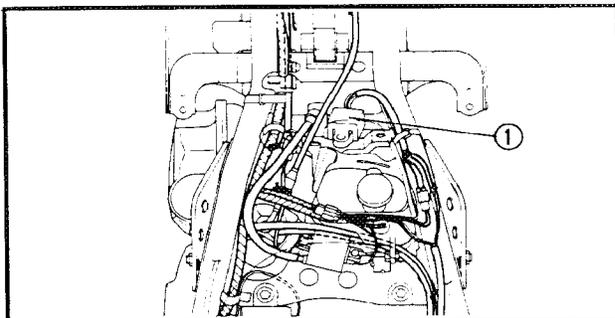


M "ENGINE STOP" Switch Inspection

1. Disconnect:
 - "ENGINE STOP" switch connector
2. Check the "ENGINE STOP" switch component for the continuity between "Black/White ① and Black ②". Refer to the "CHECKING OF SWITCHES" section.
Bad condition → Replace handlebar switch (Right)

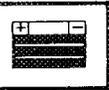
N Wire harness Inspection

1. Inspect:
 - Connection
 - Damage
 Repair/Replace
Refer to the wire harness inspection, see page 7-23.



O CDI Unit Replacement

1. Inspect:
 - Connection
2. Replace:
 - CDI unit ①



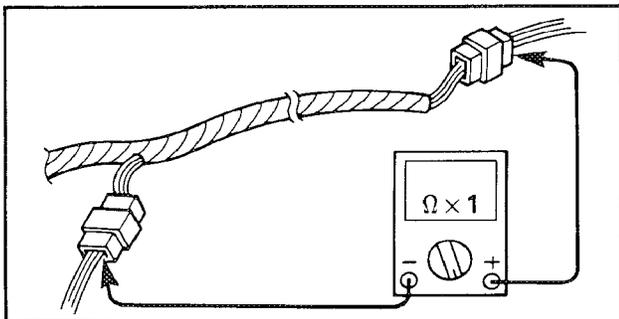
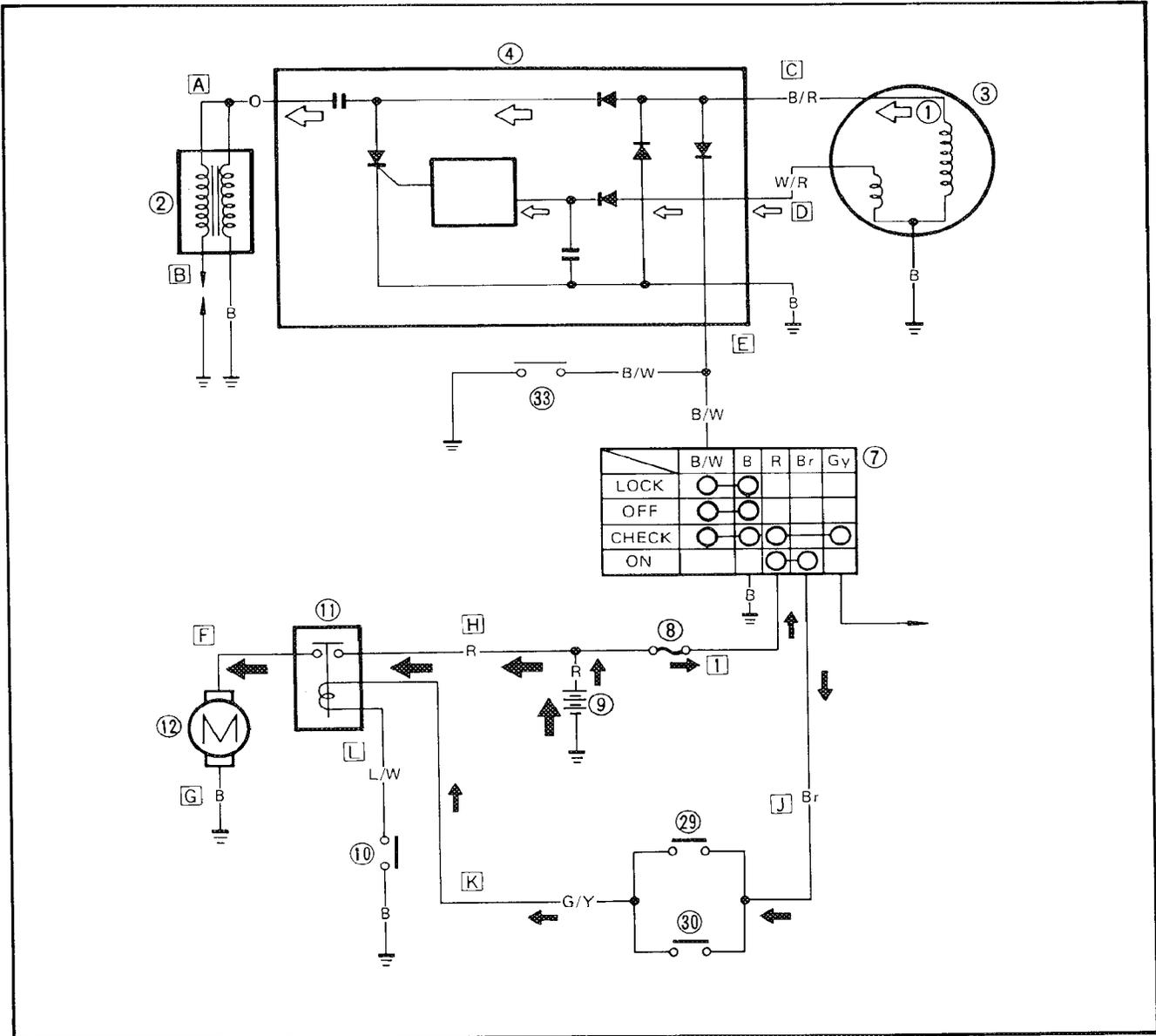
Wireharness Inspection

Ignition System Check: **A B C D E**

Starter System Check: **F G H I J K L**

- ② Ignition coil
- ③ CDI magneto
- ④ CDI unit
- ⑦ Main switch
- ⑧ Fuse
- ⑨ Battery

- ⑩ Starter switch
- ⑪ Starter relay
- ⑫ Starter motor
- ⑲ Front brake switch
- ⑳ Rear brake switch
- ㉓ Engine "stop" switch



NOTE:

- Check the continuity with the connector connected, as shown.
- For the connector shape, refer to the color wiring diagram.

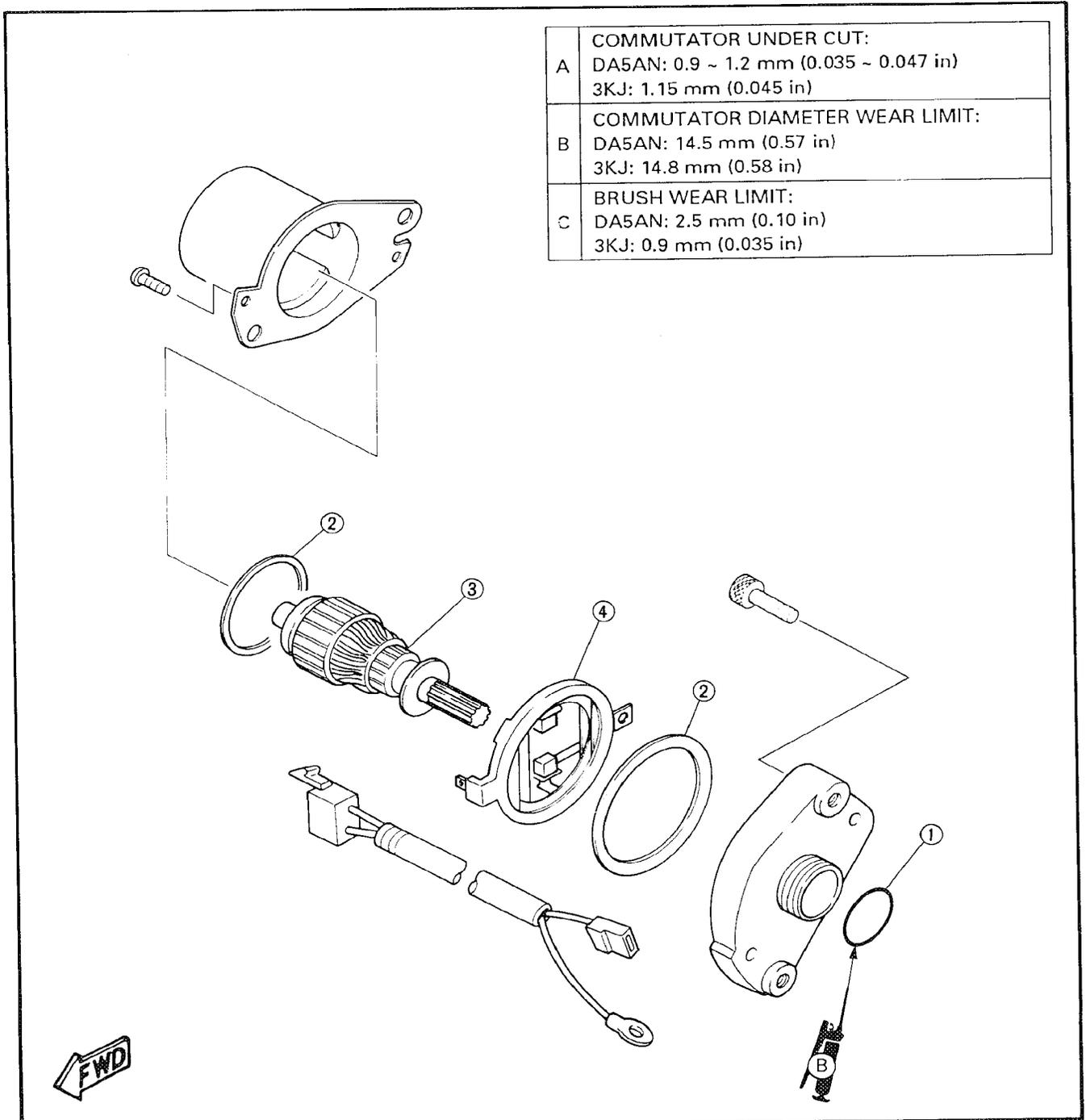


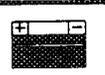
**ELECTRICAL STARTING SYSTEM
STARTER MOTOR**

- ① O-ring
- ② Rubber Seal
- ③ Armature
- ④ Brush holder assembly

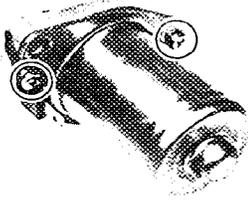
NOTE: _____
The starter motor for this scooter comes in two types:

- DA5AN (NIPPON DENSO)
- 3KJ (YAMAHA)

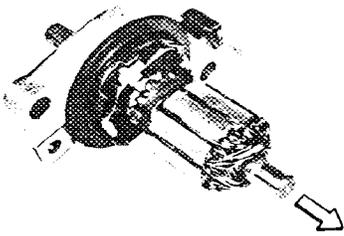


**STARTER MOTOR CHECK****Removal**

1. Remove:
 - Side cover (right)
 - Muffler assembly
 - Rear wheel
 - Starter motor



2. Remove:
 - Yoke assembly

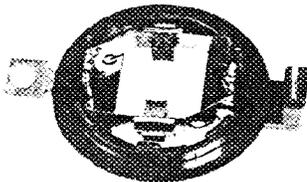


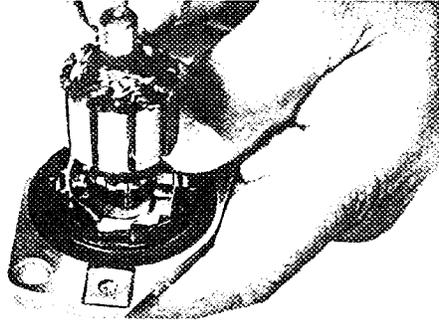
3. Remove:
 - Armature

Assembly

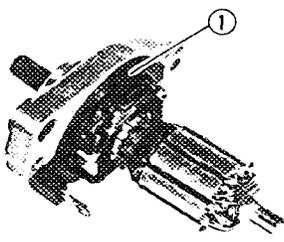
Reverse the removal procedure.
Note the following points.

1. Install:
 - Brush holder assembly

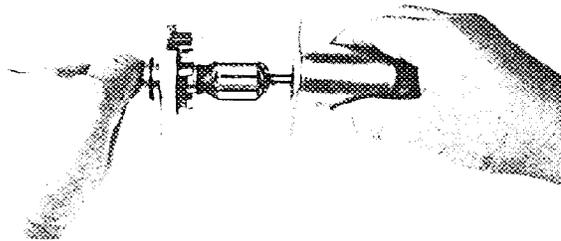




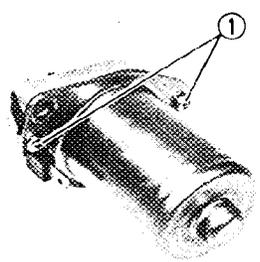
2. Install:
• Armature coil assembly



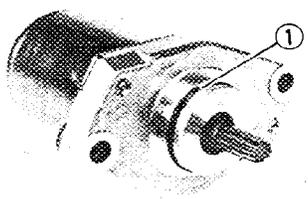
3. Install:
• Rubber seal ①



4. Install:
• Starter motor cover



5. Install:
• Bolts ①



6. Install:
• O-ring ① (new)

NOTE: _____
Apply a grease lightly.



Installation

1. Install:

- Starter motor



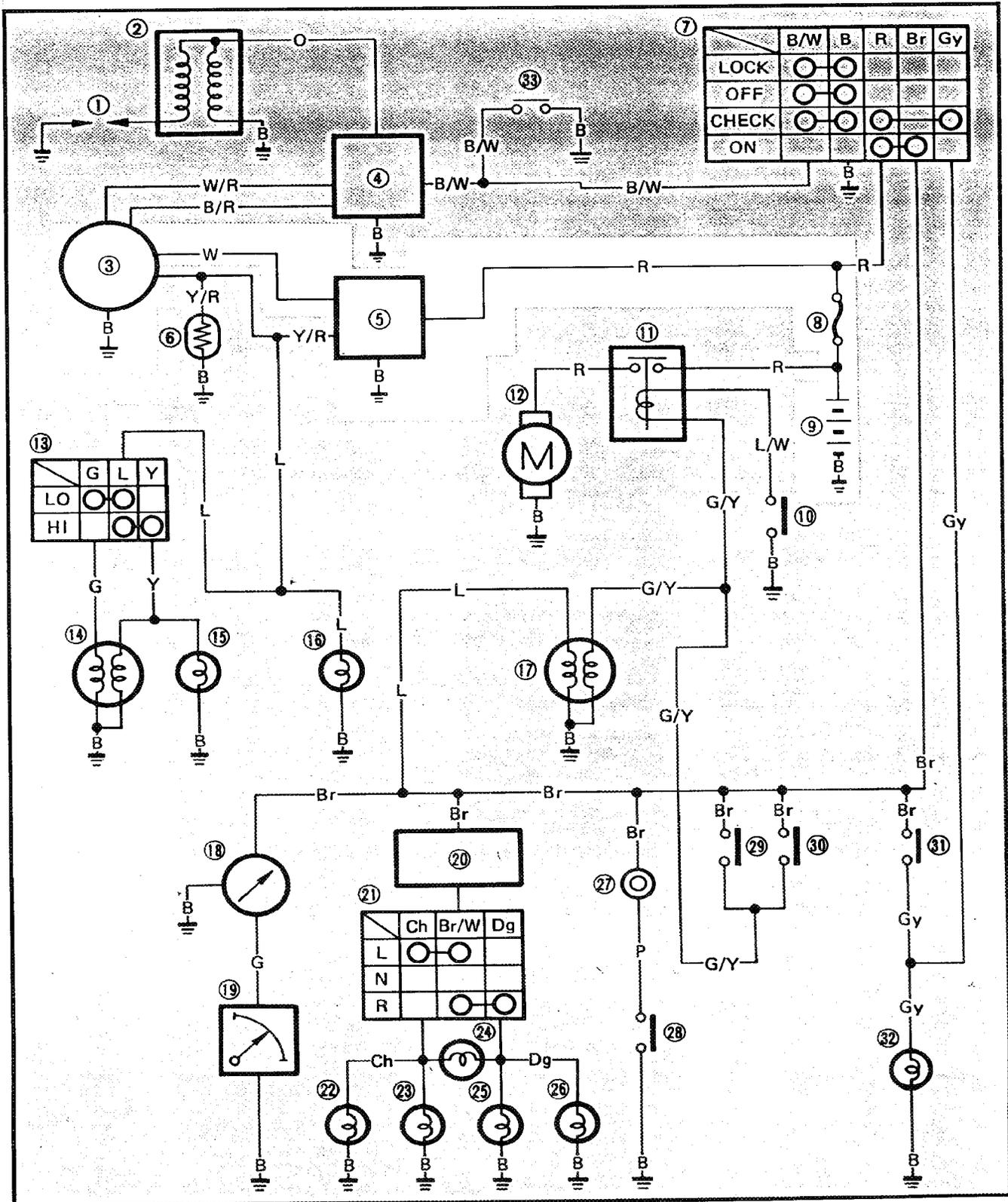
13 Nm (1.3 m - kg, 9.4 ft - lb)



CHARGING SYSTEM

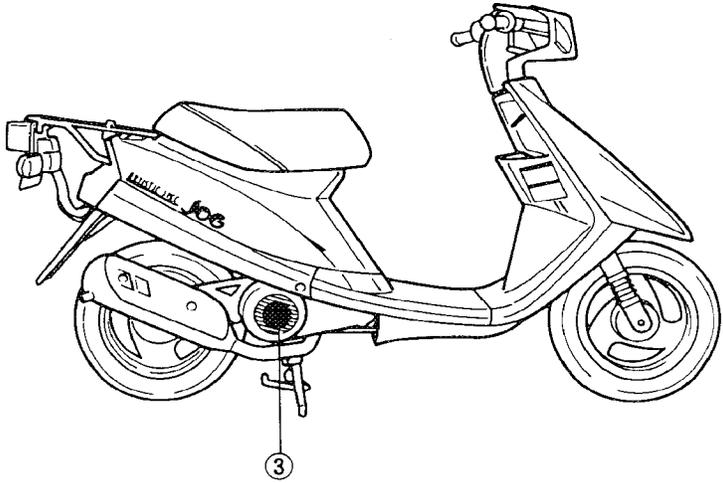
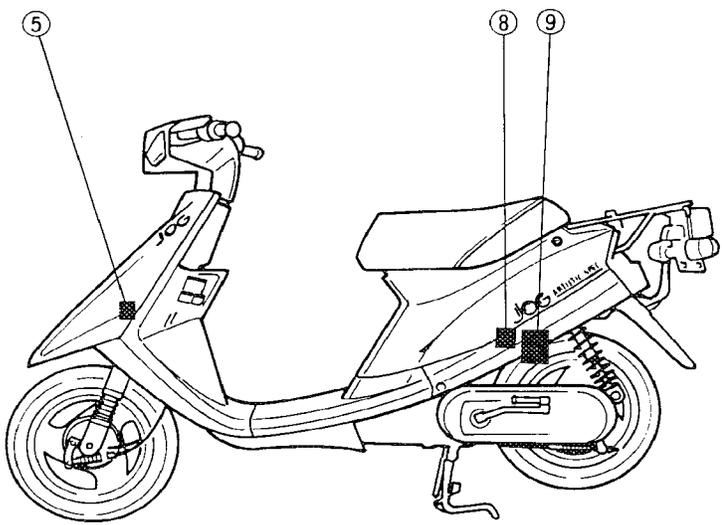
CIRCUIT DIAGRAM

Below circuit diagram shows charging circuit.



NOTE: _____
For the color codes, see page 7-2.

- ③ C.D.I. magneto
- ⑤ Rectifier/Regulator
- ⑧ Fuse
- ⑨ Battery



TROUBLESHOOTING

THE BATTERY IS NOT CHARGED.

Procedure

Check;

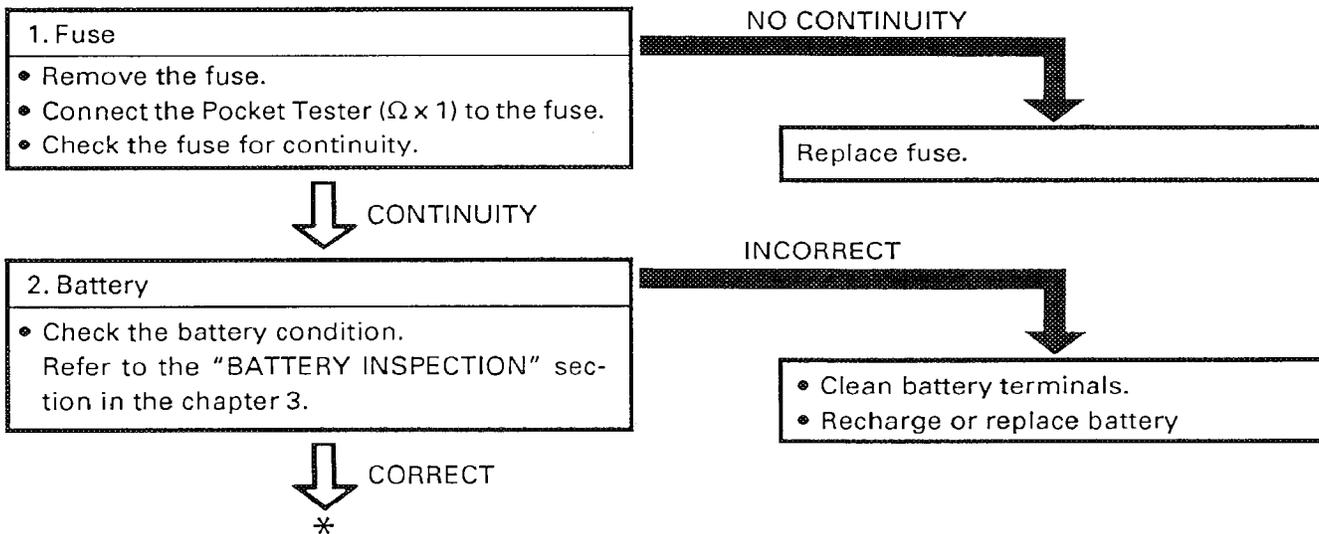
- 1. Fuse
- 2. Battery
- 3. Charge voltage
- 4. Charging coil resistance
- 5. Wiring connection (Entire charging system)

NOTE:

- Remove the following parts before troubleshooting.
 - 1) Cover/Seat/Rear carrier
 - 2) Tail cover/Side cover (L, R)
- Use the following special tools in this troubleshooting.

 Inductive Tachometer:
YU-08036-A

 Pocket Tester:
YU-03112

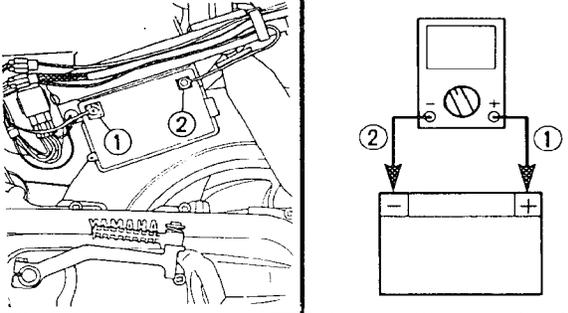




3. Charge voltage

- Connect the Engine Tachometer to spark plug lead.
- Connect the Pocket Tester (DC20V) to the battery.

Tester (+) Lead → Battery (+) terminal
Tester (-) Lead → Battery (-) terminal



- Start the engine and accelerate to about 5,000 r/min.
- Check charging voltage.

 **Charging Voltage:**
14 ~ 15 at 5,000 r/min



Replace battery.

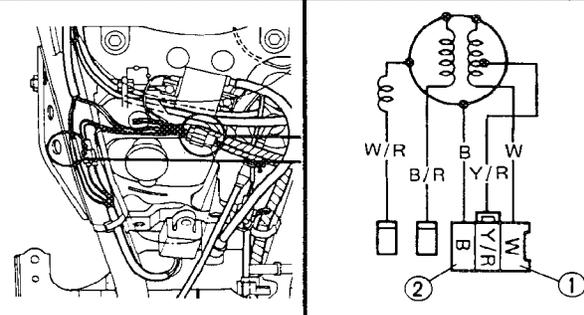


4. Charging coil resistance

- Disconnect the C.D.I. magneto coupler from the wire harness.
- Connect the Pocket Tester ($\Omega \times 1$) to the charging coil coupler.

③ C.D.I. magneto

Tester (+) Lead → White ① Terminal
Tester (-) Lead → Black ② Terminal



• Check the charging coil for specified resistance.



Charging Coil Resistance:
White – Black
0.48 ~ 0.72Ω at 20°C (68°F)

↓ MEETS SPECIFICATION

5. Wiring connection
• Check the entire charging system for connections.
Refer to the "WIRING DIAGRAM" section.

↓ CORRECT

Replace rectifier/regulator.

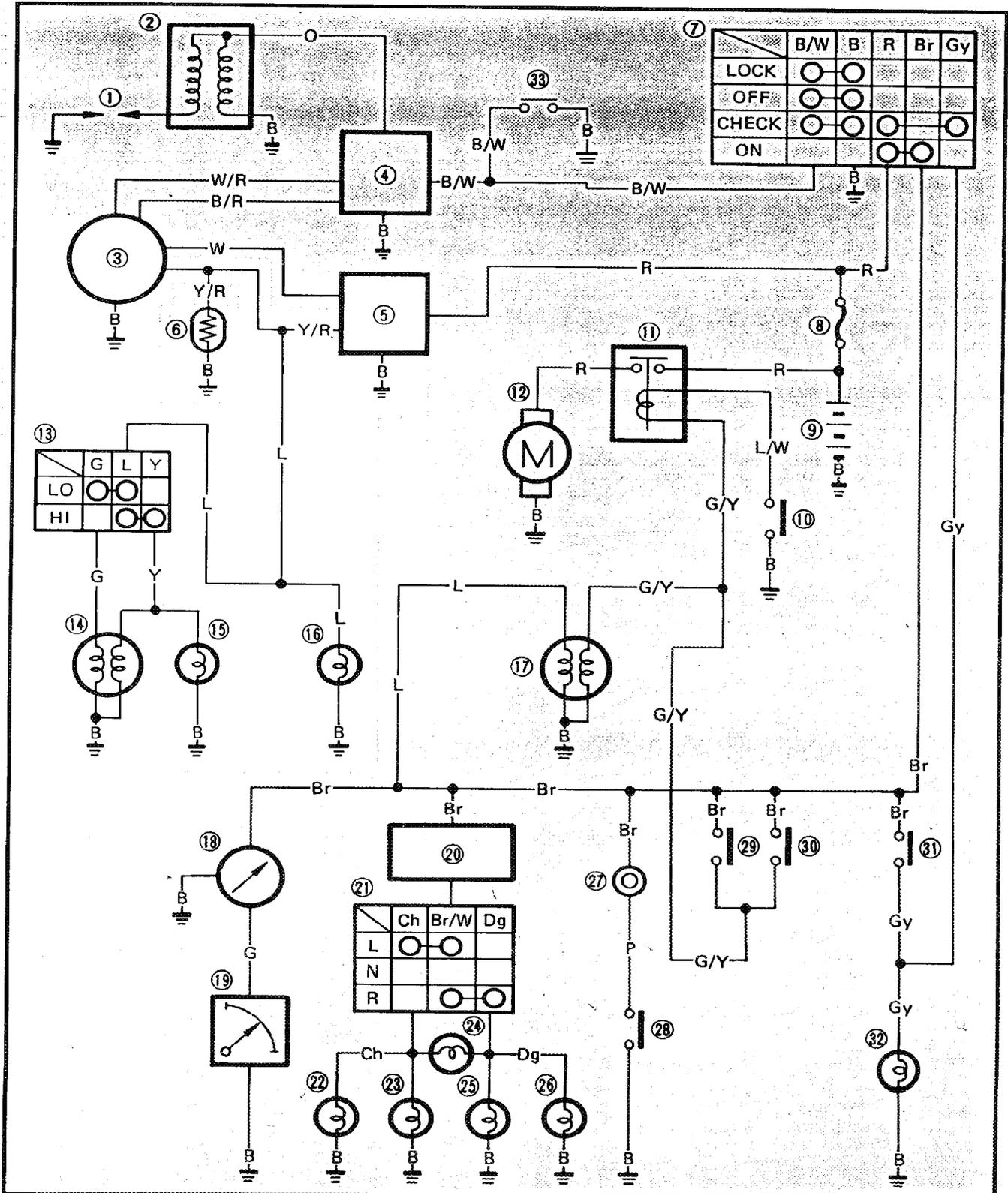
OUT OF SPECIFICATION
↓
Replace charging coil.

POOR CONNECTION
↓
Correct.



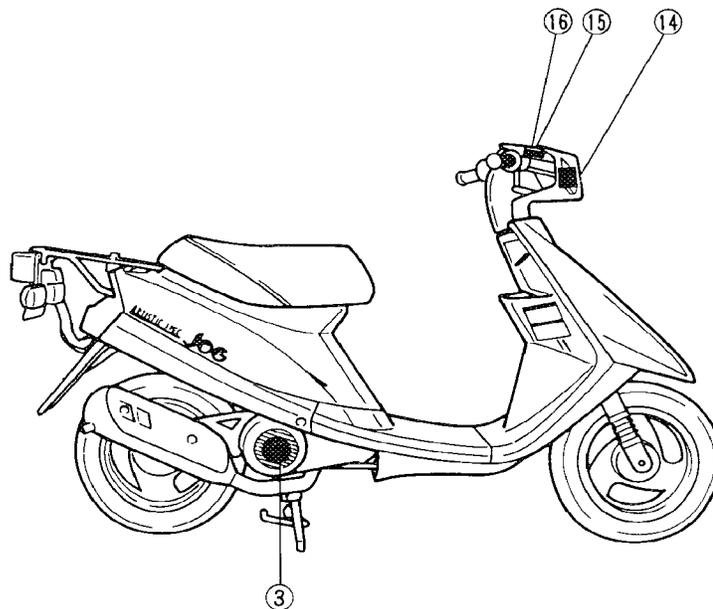
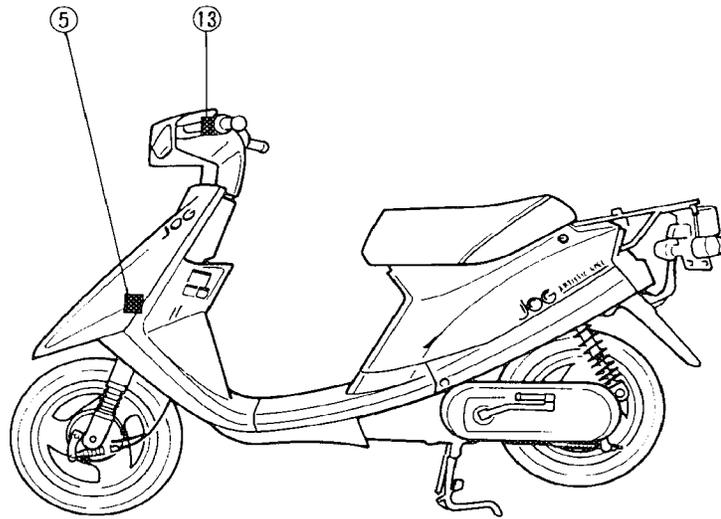
**LIGHTING SYSTEM
CIRCUIT DIAGRAM**

Below circuit diagram shows lighting circuit.



NOTE: _____
For color codes, see page 7-2.

- ③ CDI magneto
- ⑤ Rectifier/Regulator
- ⑬ "LIGHTS" (dimmer) switch
- ⑭ Headlight
- ⑮ "HIGH BEAM" indicator light
- ⑯ Meter light





TROUBLESHOOTING

HEADLIGHT "HIGH BEAM" INDICATOR LIGHT AND/OR METER LIGHT DO NOT COME ON

Procedure

Check;

- 1. Bulb and bulb socket (HEADLIGHT)
- 2. Lighting coil resistance
- 3. "LIGHT" (dimmer) switch
- 4. Wiring connection (entire lighting system)

NOTE:

- Remove the following parts before troubleshooting.
 - 1) Cover, Seat, Rear carrier, Tail cover, Side cover
 - 2) Front fender
 - 3) Handlebar cover (front)
- Use the following special tool in this troubleshooting.



Pocket Tester:
YU-03112

- 1. Bulb and bulb socket (HEADLIGHT)
- Check the bulb and bulb socket for continuity.
Refer to the "CHECKING OF BULBS" section.

NO CONTINUITY

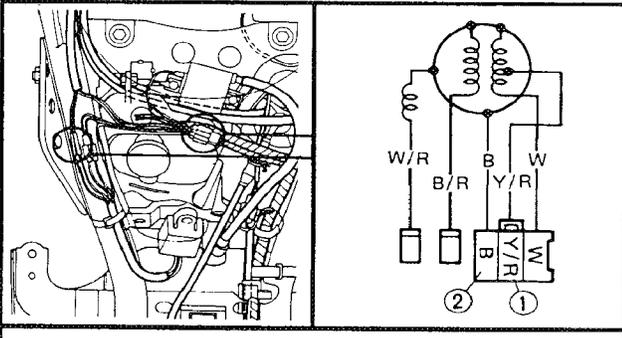
Replace bulb and/or bulb socket.

CONTINUITY

- 2. Lighting coil resistance
- Disconnect the C.D.I. magneto coupler from the wire harness.
- Connect the Pocket Tester ($\Omega \times 1$) to the lighting coil coupler.

③ C.D.I. magneto

Tester (+) Lead → Yellow/Red ① Terminal
Tester (-) Lead → Black ② Terminal



- Check the lighting coil for specified resistance.

③ Lighting coil

 **Lighting Coil Resistance:**
Yellow/Red – Black
 0.45 ~ 0.55Ω at 20°C (68°F)

↓ MEETS SPECIFICATION

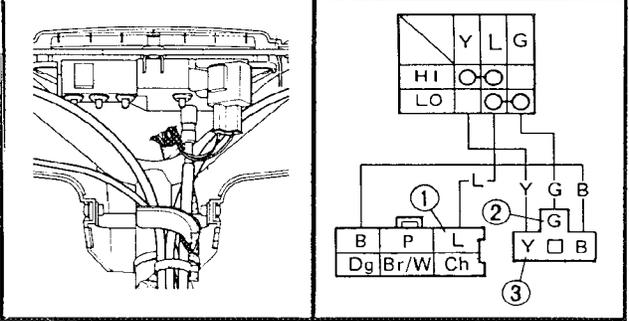
OUT OF SPECIFICATION

↓

Replace lighting coil.

3. "LIGHT" (dimmer) switch

- Disconnect the handlebar switch (left) coupler from the wire harness.
- Check the switch component for the continuity between "Blue ① and Green ②" and "Blue ① and Yellow ③". Refer to the "CHECKING OF SWITCHES" section.



↓ CORRECT

INCORRECT

↓

Replace handlebar switch (left).

4. Wiring connection

- Check the entire lighting system for connections. Refer to the "WIRING DIAGRAM" section.

↓

POOR CONNECTION

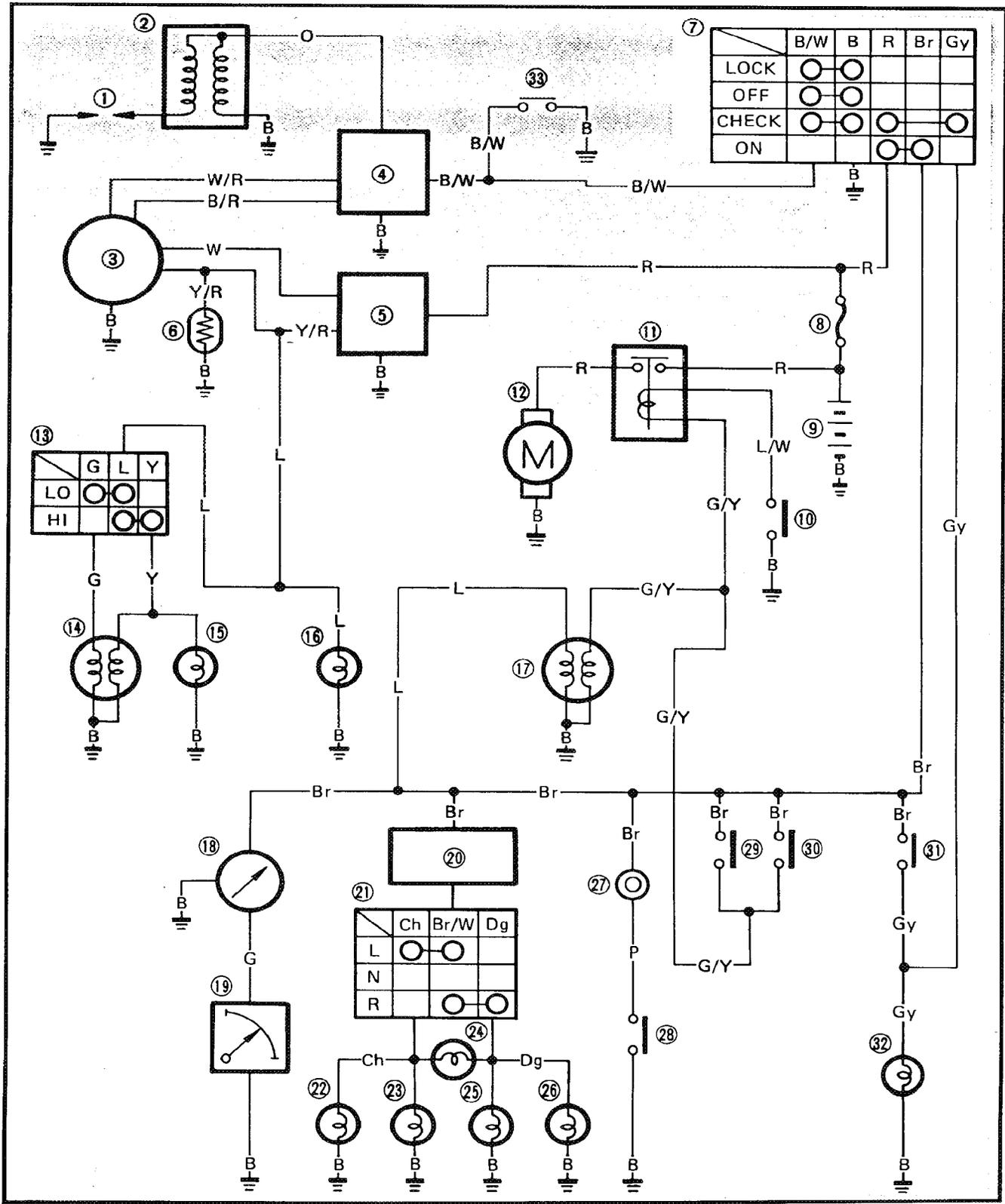
↓

Correct.

Replace rectifier/regulator.

**SIGNAL SYSTEM
CIRCUIT DIAGRAM**

Below circuit diagram shows signal circuit.

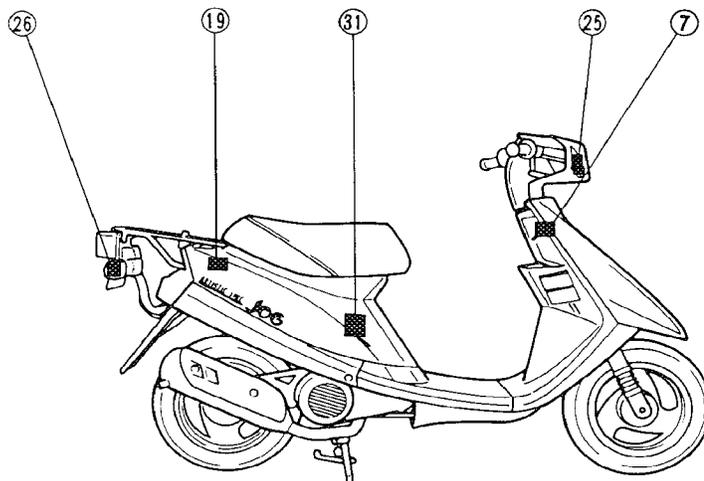
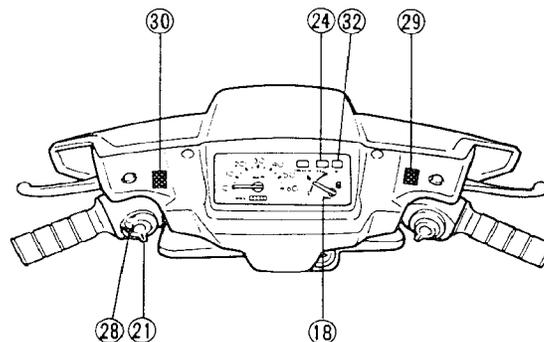
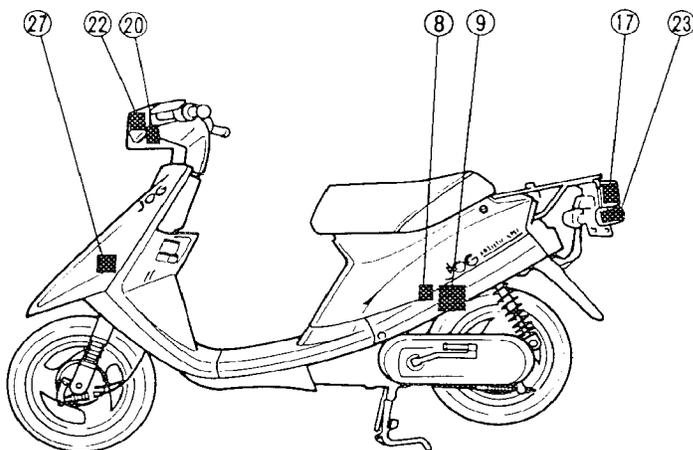




NOTE:

For the color codes, see page 7-2.

- ⑦ Main switch
- ⑧ Fuse
- ⑨ Battery
- ⑰ Tail/Brake light
- ⑱ Fuel meter
- ⑲ Fuel sender
- ⑳ Flasher relay
- ㉑ "TURN" switch
- ㉒ Front flasher light (left)
- ㉓ Rear flasher light (left)
- ㉔ "TURN" indicator light
- ㉕ Front flasher light (right)
- ㉖ Rear flasher light (right)
- ㉗ Horn
- ㉘ Horn switch
- ㉙ Front brake switch
- ㉚ Rear brake switch
- ㉛ Oil level gauge
- ㉜ Oil indicator light





TROUBLESHOOTING

- FLASHER LIGHT, TAIL/BRAKE LIGHT, "OIL" INDICATOR LIGHT AND "TURN" INDICATOR LIGHT DO NOT COME ON.
- HORN DOES NOT SOUND.
- FUEL METER DOES NOT OPERATE.

Procedure

Check;

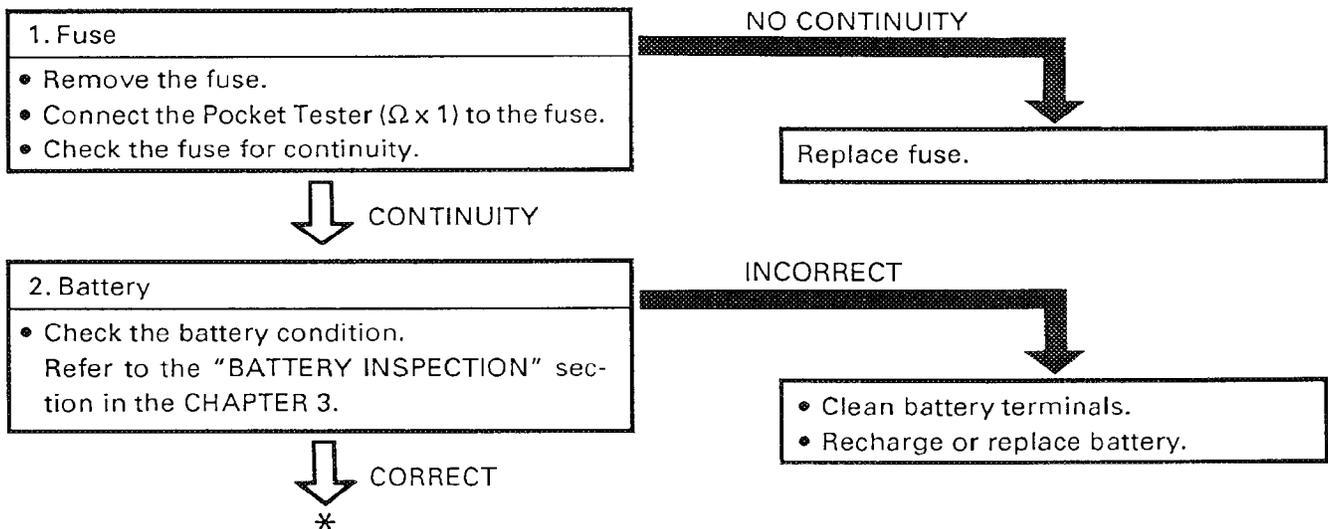
1. Fuse
2. Battery
3. Main switch
4. Wiring connection (signal system)

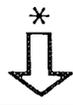
NOTE:

- Remove the following parts before troubleshooting.
 - 1) Cover, Seat, Rear carrier, Side cover, Tail cover
 - 2) Front fender
 - 3) Handlebar cover (front)
- Use the following special tool in this troubleshooting.



Pocket Tester:
YU-03112

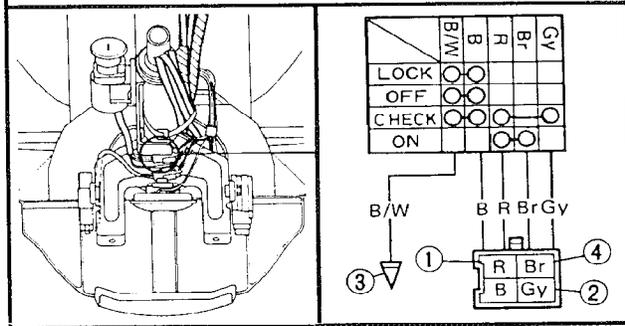




3. Main switch

- Disconnect the main switch coupler from the wire harness.
- Check the switch component for the continuity between "Red ① and Gray ②" and "Red ① and Brown ③".

Refer to the "CHECKING OF SWITCHES" section.



Replace main switch.



4. Wiring connection

- Check the entire signal for connections.

Refer to the "WIRING DIAGRAM" section.



Correct.



- Check condition of each circuit for signal system.

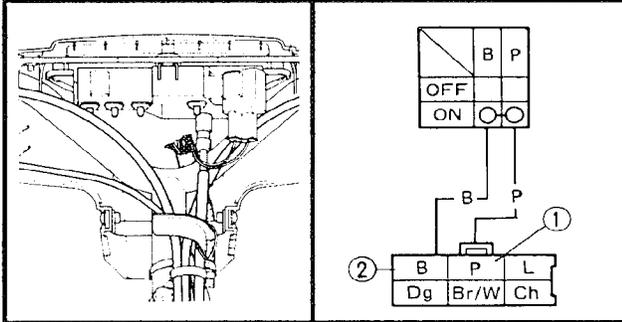
Refer to "SIGNAL SYSTEM CHECK" section.

SIGNAL SYSTEM CHECK

1. Horn does not sound.

1. "HORN" switch

- Disconnect the handlebar switch coupler from the wire harness.
- Check the switch component for the continuity between "Pink ① and Black ②". Refer to the "CHECKING OF SWITCHES" section.



↓ CORRECT

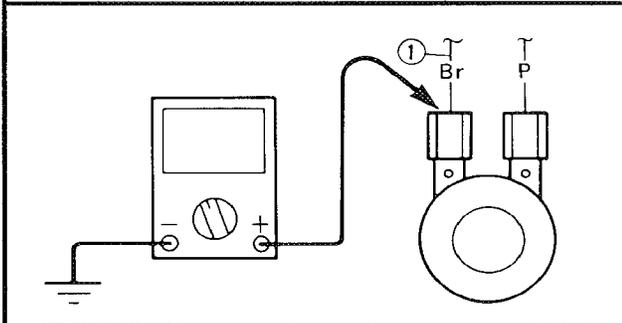
INCORRECT

Replace "HORN" switch.

2. Voltage

- Connect the Pocket Tester (DC20V) to the horn lead.

Tester (+) Lead → Brown ① Lead
 Tester (-) Lead → Frame Ground



- Turn the main switch to "ON".
- Check for voltage (12V) on the "Brown" lead at the horn terminal.

↓ MEETS SPECIFICATION (12V)
 *

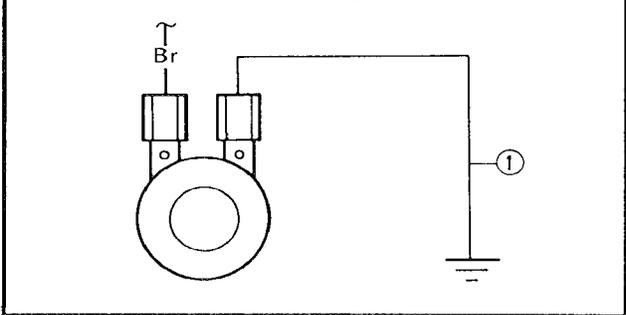
OUT OF SPECIFICATION

Check the entire signal system for continuity.

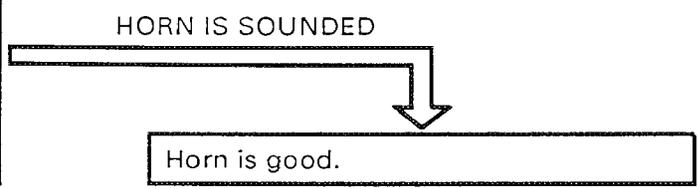


3. Horn

- Disconnect the "Pink" lead at the horn terminal.
- Connect a jumper lead ① to the horn terminal and ground the jumper lead.



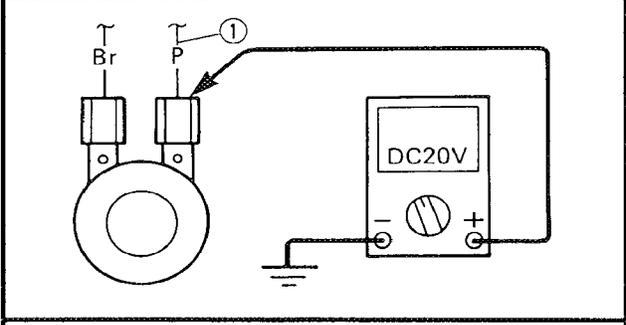
- Turn the main switch to "ON".



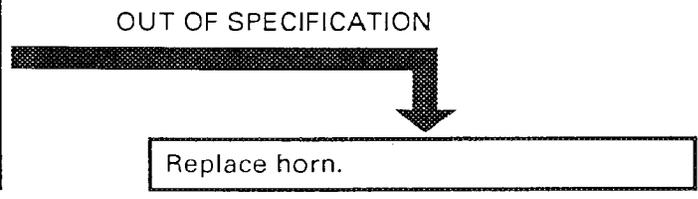
4. Voltage

- Connect the Pocket Tester (DC20V) to the horn at the Pink terminal.

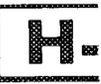
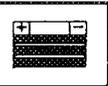
Tester (+) Lead → Pink ① Lead
 Tester (-) Lead → Frame Ground



- Turn the main switch to "ON".
- Check for voltage (12V) on the "Pink" lead at the horn terminal.



Adjust or replace horn.



2. Taillight does not come on.

1. Bulb and bulb socket

- Check the bulb and bulb socket for continuity. Refer to the "CHECKING OF BULBS" section.

CONTINUITY

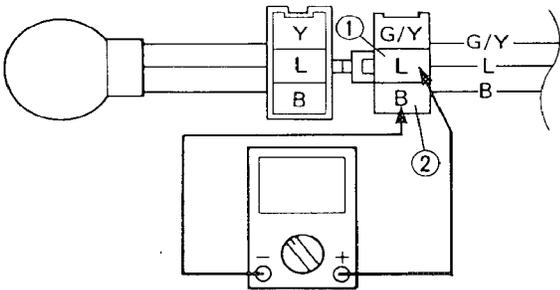
NO CONTINUITY

Replace bulb and/or bulb socket.

2. Voltage

- Connect the Pocket Tester (DC20V) to the bulb socket connector.

Tester (+) Lead → Blue 1 Terminal
 Tester (-) Lead → Black 2 Terminal



- Turn the main switch to "ON".
- Start the engine.
- Check for voltage (12V) on the "Blue" lead at the bulb socket connector.

MEETS SPECIFICATION (12V)

OUT OF SPECIFICATION

This circuit is good.

3. Wiring connection

- Check the entire signal system for connections. Refer to the "WIRING DIAGRAM" section.

3. Brake light does not come on.

1. Bulb and bulb socket

- Check the bulb and bulb socket for continuity. Refer to the "CHECKING OF BULBS" section.

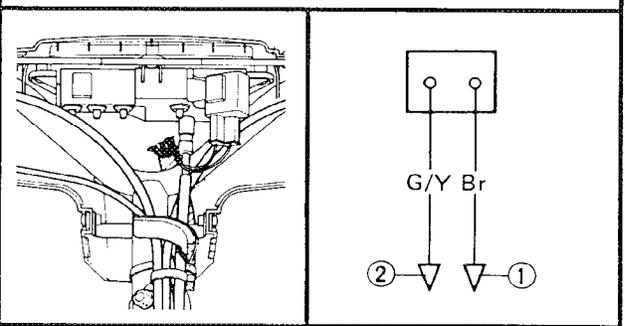
CONTINUITY

NO CONTINUITY

Replace bulb and/or bulb socket.

2. Brake switch

- Disconnect the brake switch coupler from the wire harness.
- Check the switch component for the continuity between "Brown" ① and Green/Yellow ②". Refer to the "CHECKING OF SWITCHES" section.



CORRECT

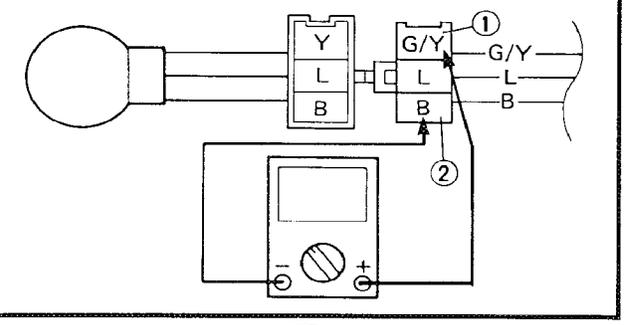
INCORRECT

Replace brake switch.

3. Voltage

- Connect the Pocket Tester (DC20V) to the bulb socket connector.

Tester (+) Lead → Green/Yellow ① Terminal
 Tester (-) Lead → Black ② Terminal



*

- Turn the main switch to "ON".
- The front brake lever and rear brake lever are pulled.
- Check for voltage (12V) on the Green/Yellow lead at the bulb socket connector.

↓ MEETS SPECIFICATION (12V)

This circuit is good.

4. Wiring connection
- Check the entire signal system for connections. Refer to the "WIRING DIAGRAM" section.

4. Flasher light and/or "TURN" indicator light do not blink.

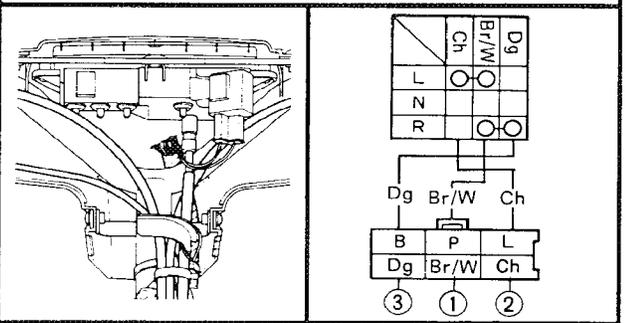
1. Bulb and bulb socket
- Check the bulb and bulb socket for continuity. Refer to the "CHECKING OF BULBS" section.

NO CONTINUITY

Replace bulb and/or bulb socket.

↓ CONTINUITY

2. "TURN" switch
- Disconnect the handlebar switch coupler from the wire harness.
 - Check the switch component for the continuity between "Brown/White ① and Chocolate ②" and "Brown/White ① and Dark green ③". Refer to the "CHECKING OF SWITCHES" section.



NO CONTINUITY

Replace handlebar switch (left).

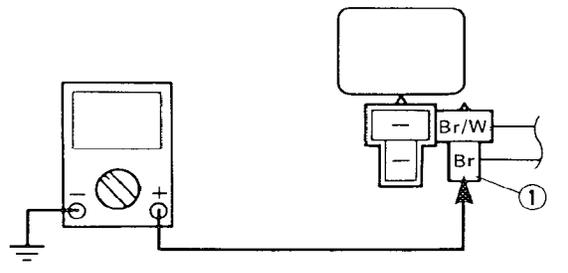
↓ CORRECT *



3. Voltage

- Connect the Pocket Tester (DC20V) to the flasher relay.

Tester (+) Lead → Brown ① Lead
Tester (-) Lead → Frame Ground



- Turn the main switch to "ON".
- Check for voltage (12V) on the "Brown" lead at the flasher relay terminal.

OUT OF SPECIFICATION



Check the entire signal system for connections.

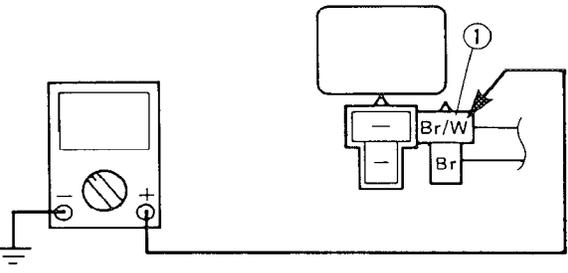


MEETS SPECIFICATION (12V)

4. Voltage

- Connect the Pocket Tester (DC20V) to the flasher relay.

Tester (+) Lead → Brown/White ① Lead
Tester (-) Lead → Frame Ground



- Turn the main switch to "ON".
- Check for voltage (12V) on the "Brown/White" lead at the flasher relay terminal.

OUT OF SPECIFICATION



Replace flasher relay.



MEETS SPECIFICATION (12V)

*



5. Voltage

- Connect the Pocket Tester (DC20V) to the bulb socket connector.

At Flasher Light (left):
 Tester (+) Lead → Chocolate ① Lead
 Tester (-) Lead → Frame Ground

At Flasher Light (right):
 Tester (+) Lead → Dark green ② Lead
 Tester (-) Lead → Frame Ground

- Turn the main switch to "ON".
- Turn the "TURN" switch to "L" or "R".
- Check for voltage (12V) on the "Chocolate" lead or "Dark green" lead at the bulb socket connector.



MEETS SPECIFICATION (12V)

This circuit is good.

OUT OF SPECIFICATION



6. Wiring connection

- Check the entire signal system for connections. Refer to the "WIRING DIAGRAM" section.



5. "OIL" indicator light does not come on.

1. Bulb and bulb socket

- Check the bulb and bulb socket for continuity. Refer to the "CHECKING OF BULBS" section.

NO CONTINUITY

Replace bulb and/or bulb socket.

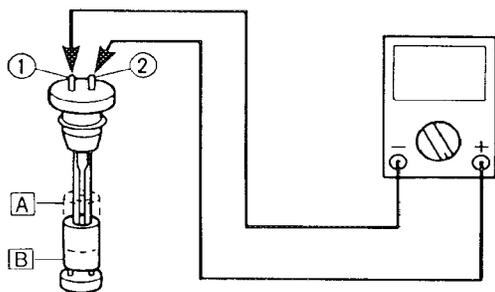
CONTINUITY

2. Oil level switch

- Remove the oil level switch from the oil tank.
- Connect the Pocket Tester ($\Omega \times 1$) to the oil level switch.

Tester (+) Lead → Terminal ①

Tester (-) Lead → Terminal ②



- Check the oil level gauge for continuity.

Switch position		Good condition	Bad condition		
A	Upright position	X	O	X	O
B	Upside down position	O	X	X	O

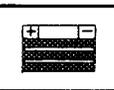
O: Continuity X: Nocontinuity

BAD CONDITION

Replace oil level switch.

GOOD CONDITION





3. Voltage

- Connect the Pocket Tester (DC20V) to the bulb socket connector.

Tester (+) Lead → Gray ① Lead
 Tester (-) Lead → Frame Ground

- Turn the main switch to " * "
- Check for voltage (12V) on the "Gray" lead at bulb socket connector.

OUT OF SPECIFICATION

4. Wiring connection

- Check the entire signal system for connections. Refer to the "WIRING DIAGRAM" section.



MEETS SPECIFICATION (12V)

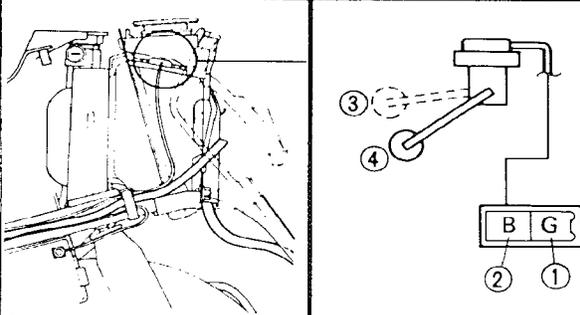
This circuit is good.

6. Fuel meter does not operate

1. Fuel sender

- Remove the fuel sender from the fuel tank.
- Connect the Pocket Tester ($\Omega \times 10$) to the fuel sender coupler.

Tester (+) Lead → Green ① Terminal
Tester (-) Lead → Black ② Terminal



- Check the fuel sender for specified resistance.

 Fuel Sender Resistance (Up ③):
4 ~ 10 Ω at 20°C (68°F)
Fuel Sender Resistance (Down ④):
90 ~ 100 Ω at 20°C (68°F)

OUT OF SPECIFICATION

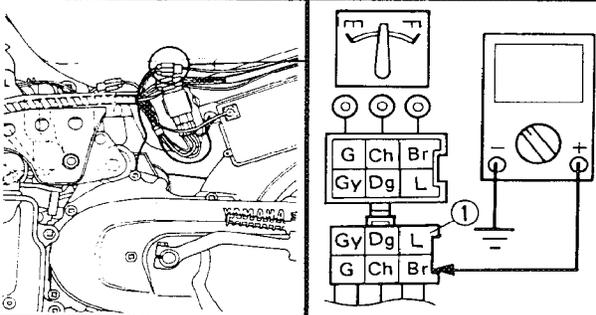
Replace fuel sender.

BOTH MEET SPECIFICATION

2. Voltage

- Connect the Pocket Tester (DC20V) to the fuel meter coupler.

Tester Lead → Brown ① Terminal
Tester Lead → Black ② Terminal



- Turn the main switch to "ON".
- Check for voltage (12V) on the "Brown" lead at the fuel meter coupler.

OUT OF SPECIFICATION

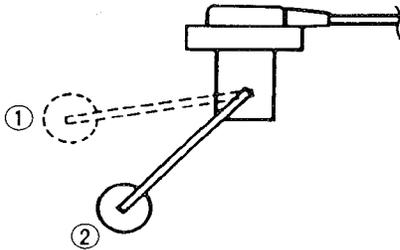
Check the entire signal system for connections.

MEETS SPECIFICATION (12V)
*

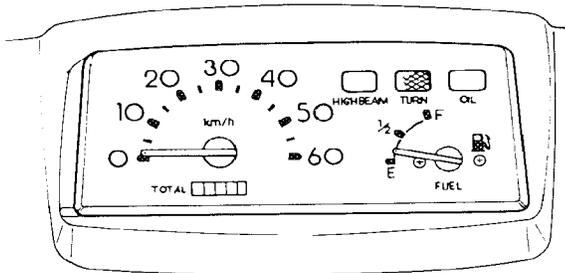


3. Fuel meter

- Move the float to "UP ①" or "DOWN ②".



- Turn the main switch to "ON".
- Check the fuel meter needle moves "F" ① or "E" ②.



MOVES

4. Wiring connection

Check the entire signal system for connections.
Refer to the "WIRING DIAGRAM" section.

NOTE:

Before reading the meter, stay put the float for more than three minutes respectively at "Up" or "Down".

DOES NOT MOVE



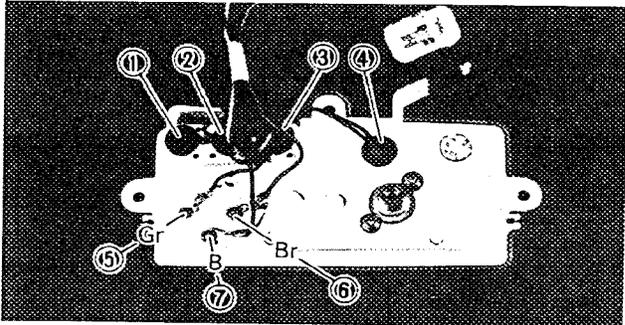
Replace fuel meter.

METER ASSEMBLY

Removal

1. Remove:
 - Handlebar cover (front and rear)
Refer to "CHAPTER 3 – COVERS" section.
2. Remove:
 - Meter lights
 - Leads
 - Indicator lights

CAUTION: _____
 Do not remove the indicator bulbs by pulling the leads.



Installation

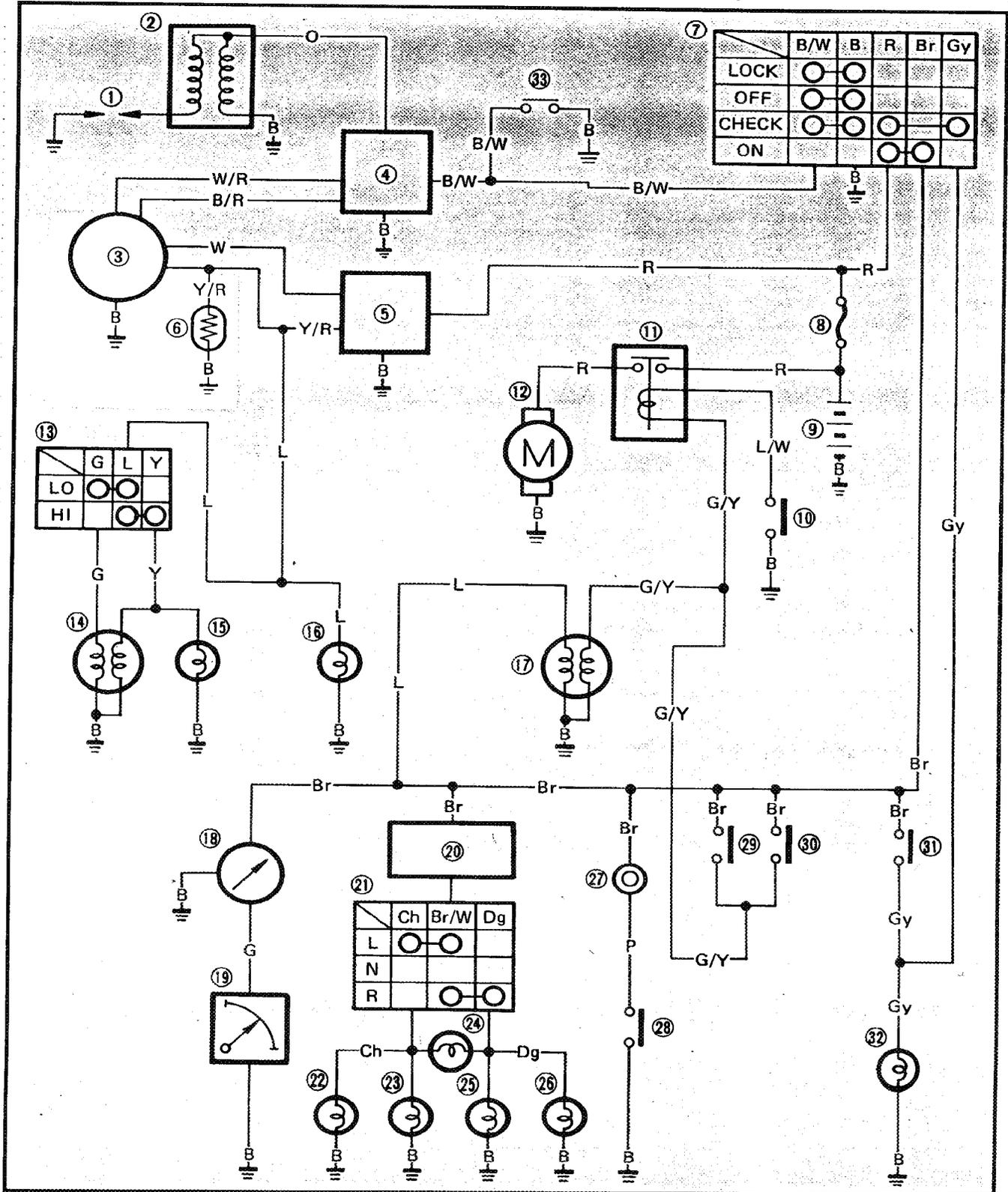
Reverse the "REMOVAL" steps by noting the following points.

1. Install the meter lights and leads as shown.
 - ① "OIL" indicator light leads
(Gray and Black lead)
 - ② "TURN" indicator light lead
(Dark green and chocolate lead)
 - ③ "HIGH BEAM" indicator light lead
(Yellow and Black lead)
 - ④ Meter light lead
(Blue and Black lead)
 - ⑤ Fuel meter lead (Green)
 - ⑥ Fuel meter lead (Brown)
 - ⑦ Fuel meter lead (Black)



**AUTO CHOKE
CIRCUIT DIAGRAM**

Below circuit diagram shows aut choke circuit.

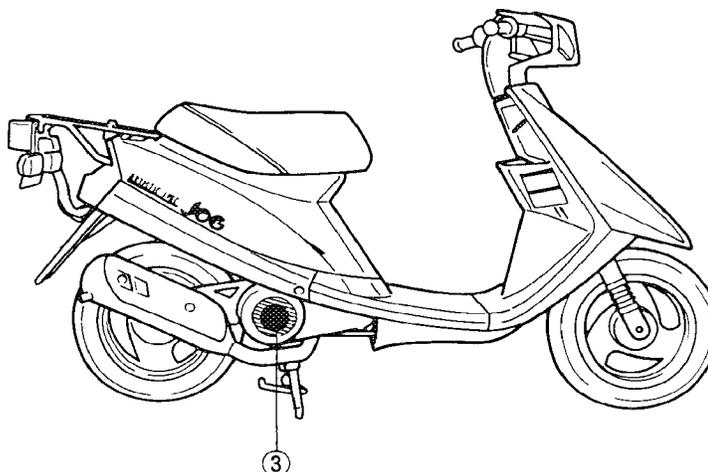
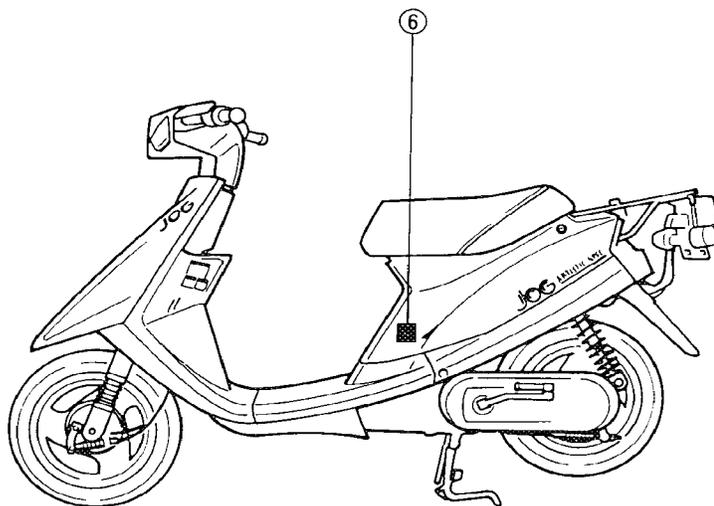




NOTE:

For the color codes, see page 7-2.

- ③ C.D.I. magneto
- ⑥ Auto choke unit assembly



TROUBLE SHOOTING

AUTO CHOKE DOES NOT OPERATE.

Procedure

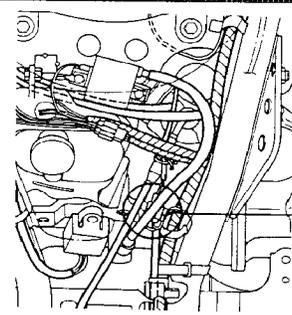
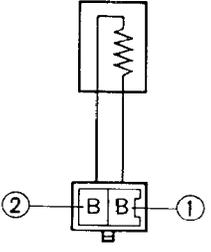
Check;

1. P.T.C. thermistor resistance
2. Lighting coil resistance
3. Voltage
4. Wiring connection

NOTE:

- Remove the following parts before troubleshooting.
 - 1) Cover, Seat, Rear carrier
 - 2) Side cover (left and right) Tail cover.
- Use the following special tool in this troubleshooting.

	Pocket tester: YU-03112
---	----------------------------

1. P.T.C. thermistor resistance	
<ul style="list-style-type: none"> • Disconnect the auto choke unit coupler from the wire harness. • Connect the pocket tester ($\Omega \times 1$) to the auto choke unit lead. 	
Tester (+) lead → Black ① Tester (-) lead → Black ②	
	
	P.T.C. thermistor resistance 2 ~ 6 Ω at 20°C (68°F)

↓ MEETS SPECIFICATION
*

OUT OF SPECIFICATION
↓

Replace the auto choke unit.



2. Lighting coil resistance

- Disconnect the C.D.I. magneto coupler from wire harness
- Connect the pocket tester ($\Omega \times 1$) to the lighting coil lead.

Tester (+) lead → Yellow/Red ① terminal
 Tester (-) lead → Black ② terminal

Lighting coil resistance:
 0.4 ~ 0.6 Ω at 20°C

OUT OF SPECIFICATION

Replace the lighting coil.

MEETS SPECIFICATION

3. Voltage

- Connect the pocket tester (AC20V) to the auto choke lead.

Tester (+) lead → Yellow/Red ① terminal
 Tester (-) lead → Black ② terminal

- Turn the main switch to "ON".
- Start the engine and accelerate to about 3,000r/min.
- Check the voltage.

OUT OF SPECIFICATION

4. Wiring connection

- Check the entire auto choke unit for connection. Refer to the "WIRING DIAGRAM" section.



	<p>Voltage: 10V or more at 3,000r/min</p>
---	---



MEETS SPECIFICATION

Auto choke unit is good.

CHAPTER 8. TROUBLESHOOTING

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ELECTRICAL SYSTEM	H-14
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POOR IDLE SPEED PERFORMANCE	H-15
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INSTABLE HANDING	I-2
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FLASHER WINKS QUICKER	I-3
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OVERHEATING	I-3
OVERHEATING	I-3
CY50B WIRING DIAGRAM	

TROUBLESHOOTING

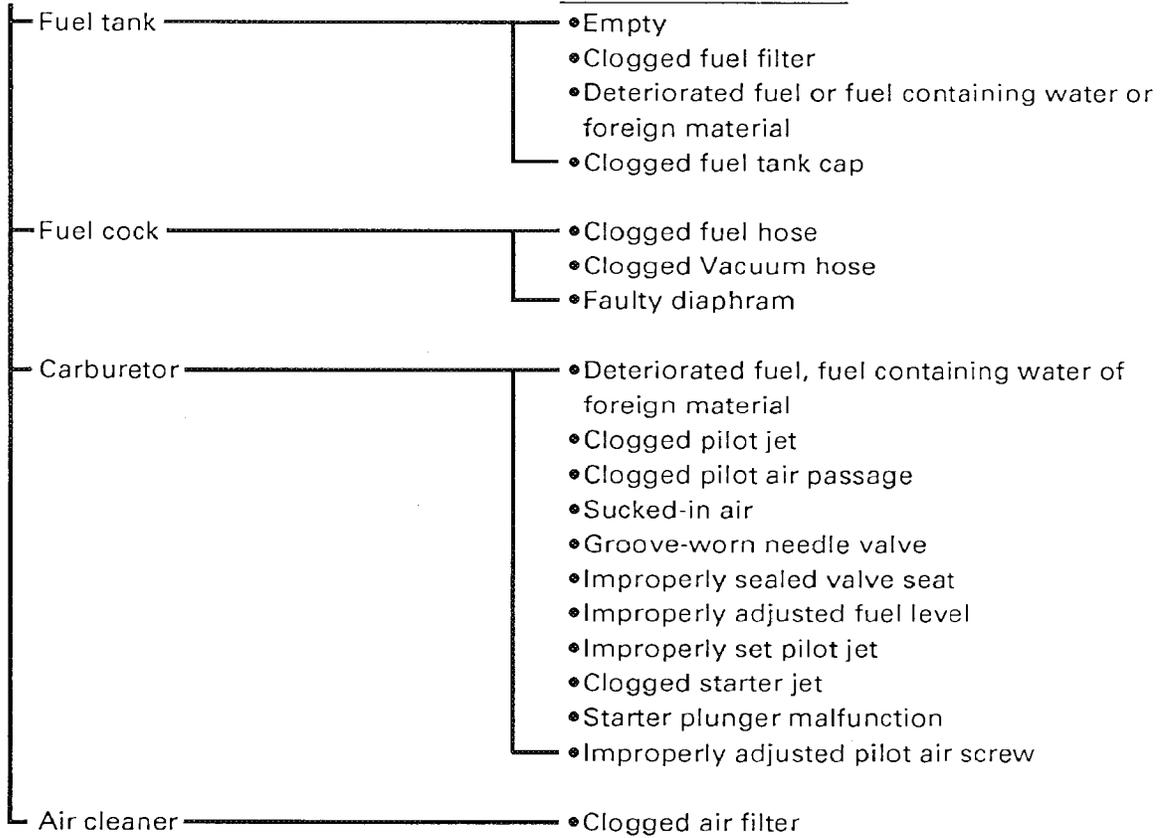
NOTE:

The following troubleshooting does not cover all the possible causes of trouble. It should be helpful, however, as a guide to troubleshooting. Refer to the relative procedure in this manual for inspection, adjustment and replacement of parts.

STARTING FAILURE/HARD STARTING

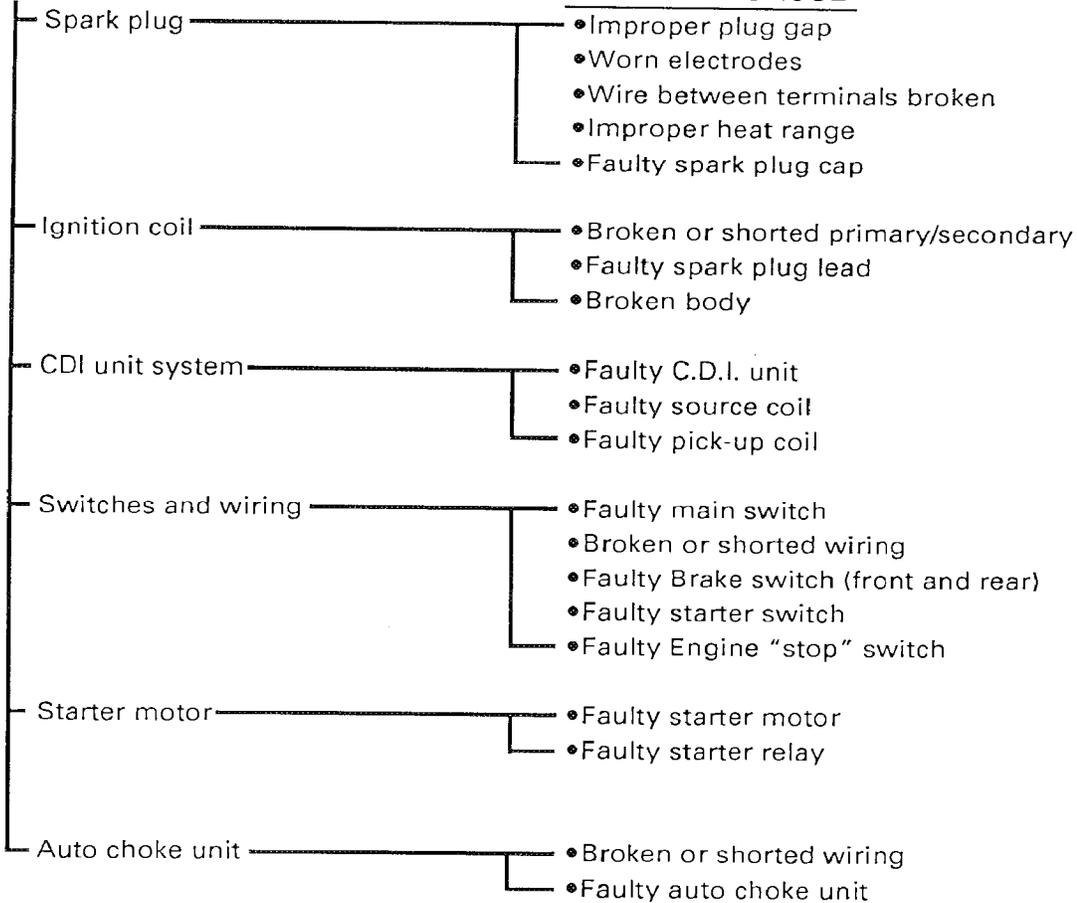
FUEL SYSTEM

PROBABLE CAUSE



ELECTRICAL SYSTEM

PROBABLE CAUSE



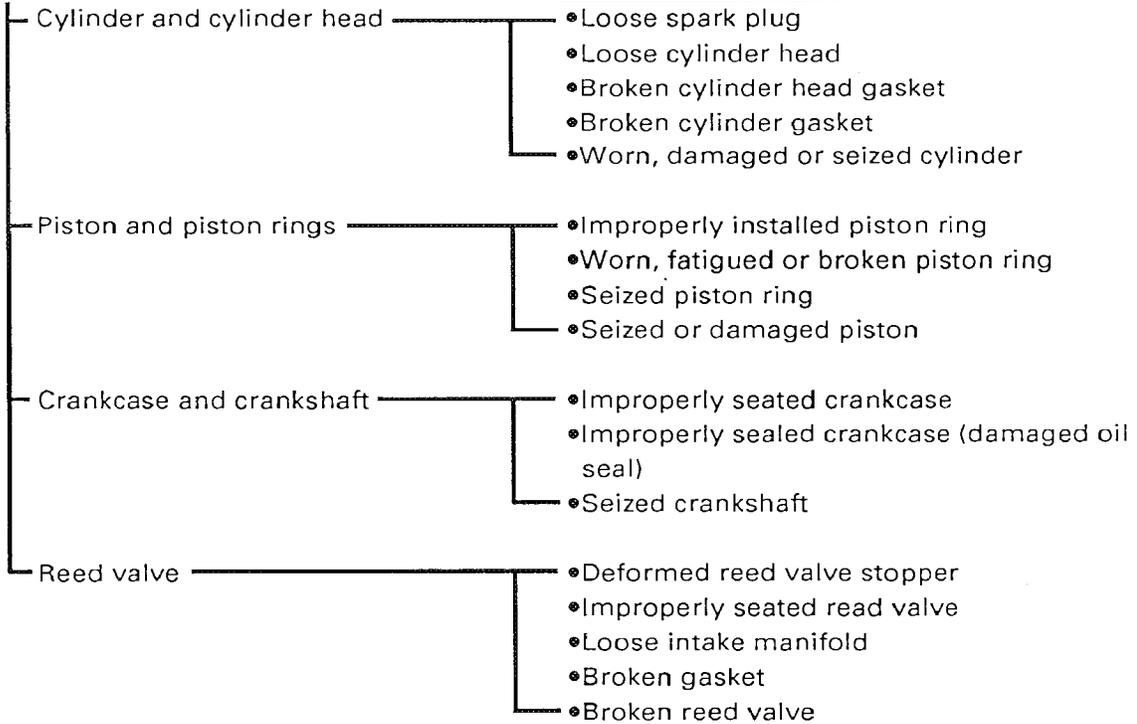
**STARTING FAILURE/HARD STARTING/
POOR IDLE SPEED PERFORMANCE**

**TRBL
SHTG ?**

H-

COMPRESSION SYSTEM

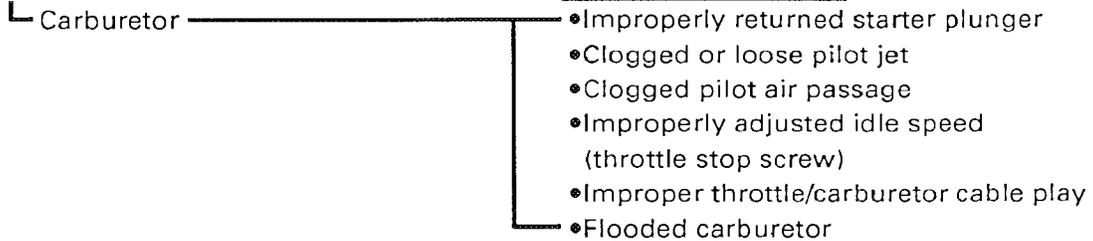
PROBABLE CAUSE



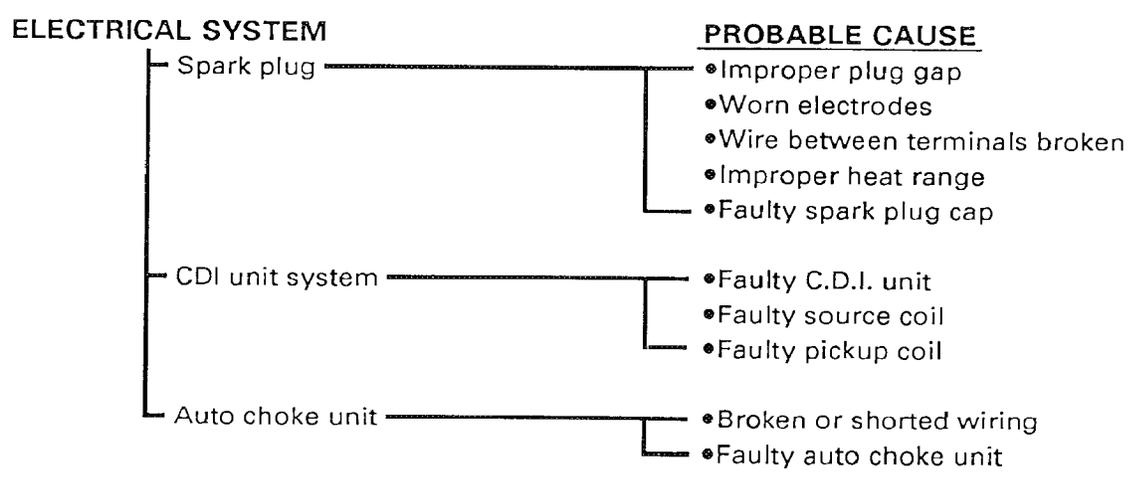
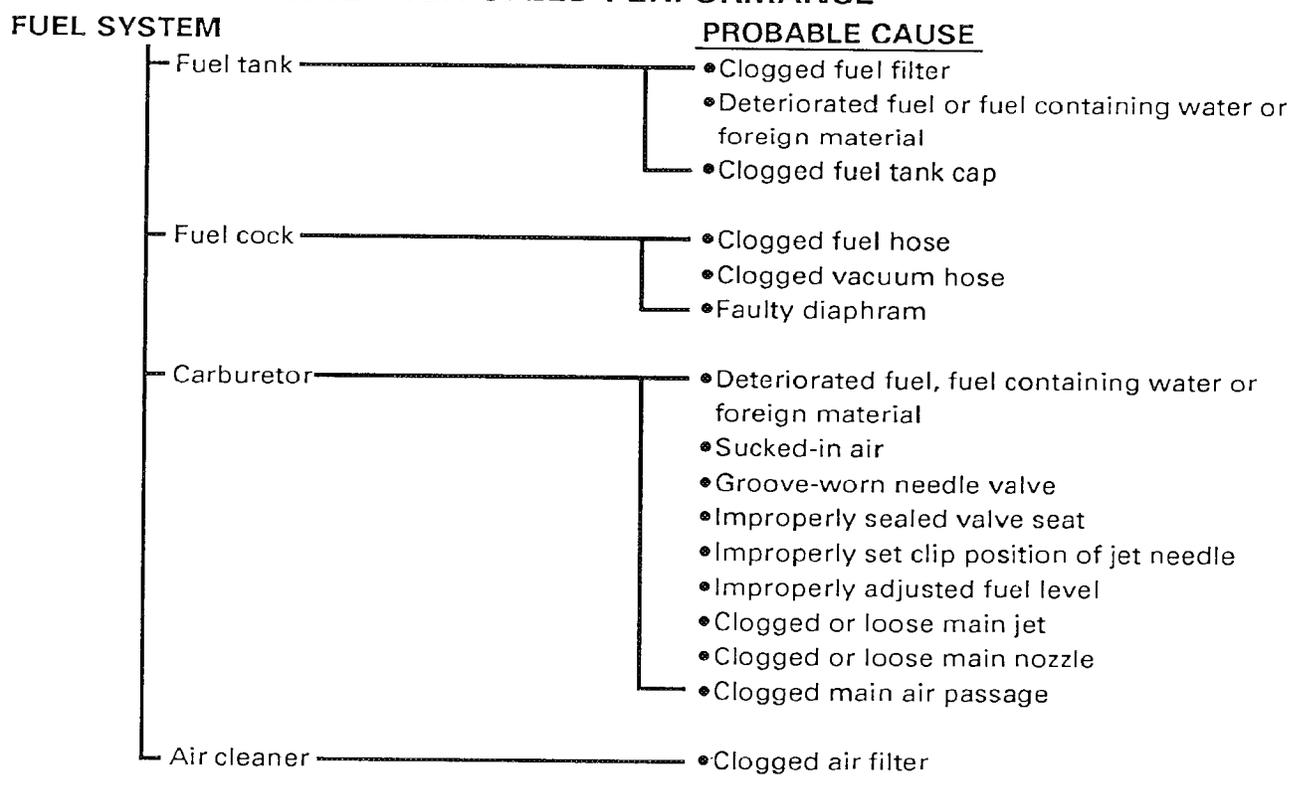
POOR IDLE SPEED PERFORMANCE

POOR IDLE SPEED PERFORMANCE

PROBABLE CAUSE

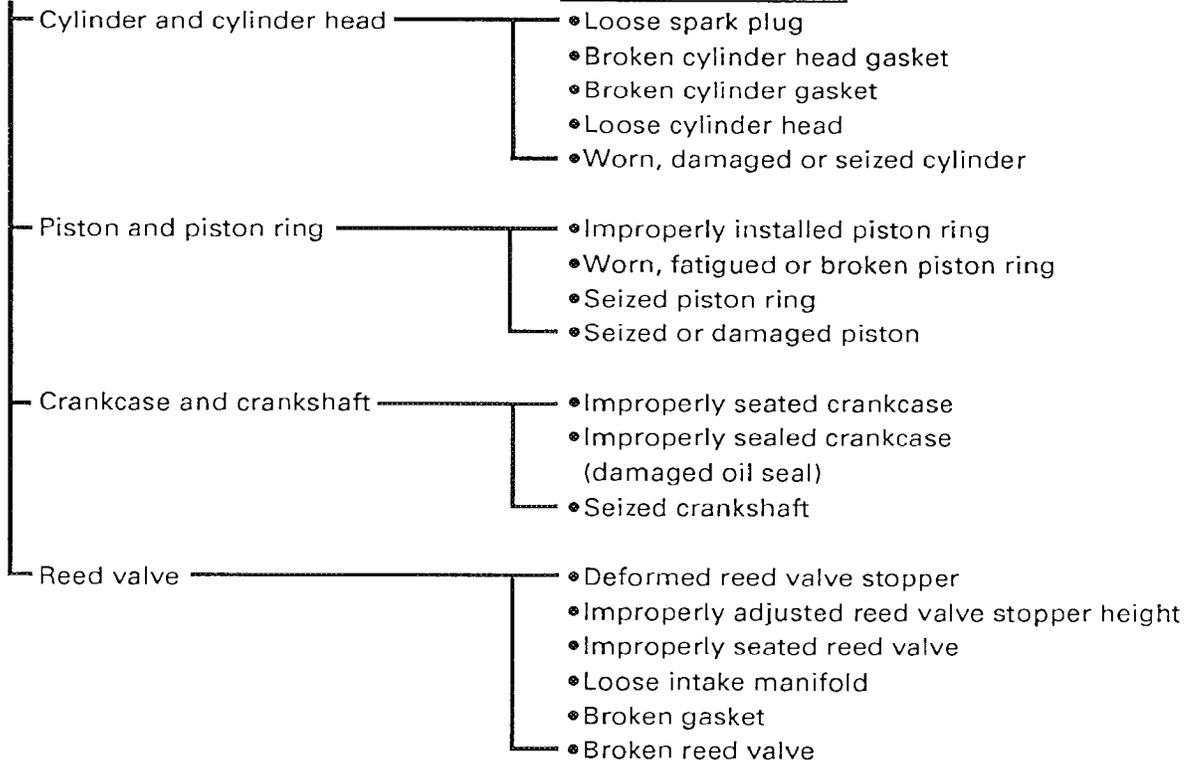


POOR MEDIUM AND HIGH SPEED PERFORMANCE



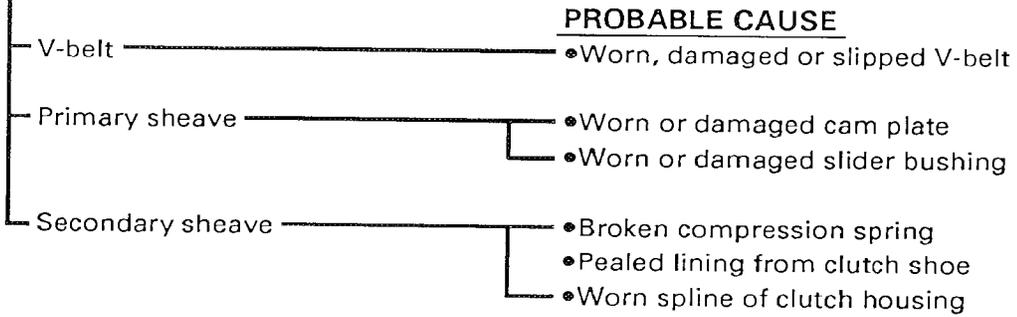
COMPRESSION SYSTEM

PROBABLE CAUSE



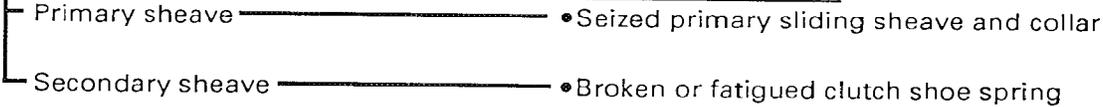
FAULTY AUTOMATIC (V-BELT TYPE)

SCOOTER DOES NOT MOVE WHILE ENGINE IS OPERATING



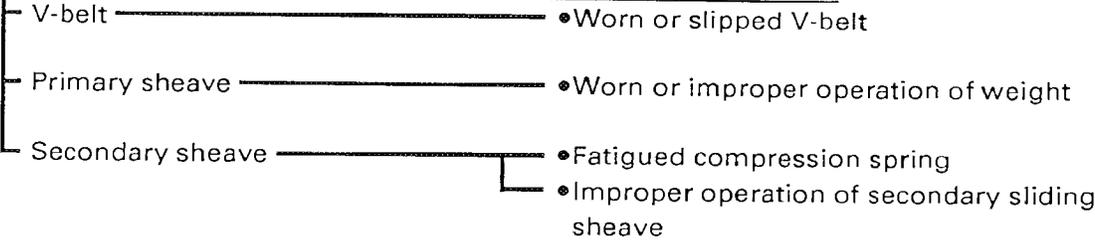
CLUTCH-OUT FAILURE

PROBABLE CAUSE



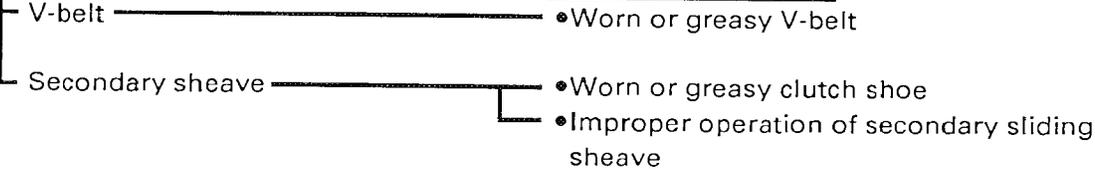
POOR STANDING START (LOW CLIMBING ABILITY)

PROBABLE CAUSE



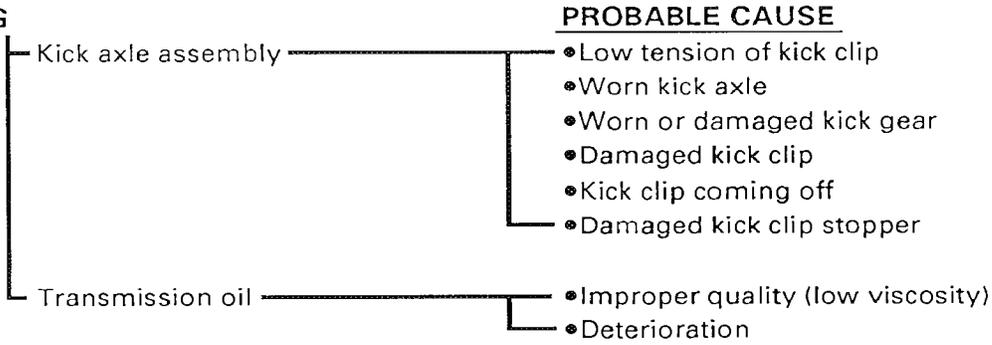
POOR ACCELERATION (POOR HIGH SPEED)

PROBABLE CAUSE

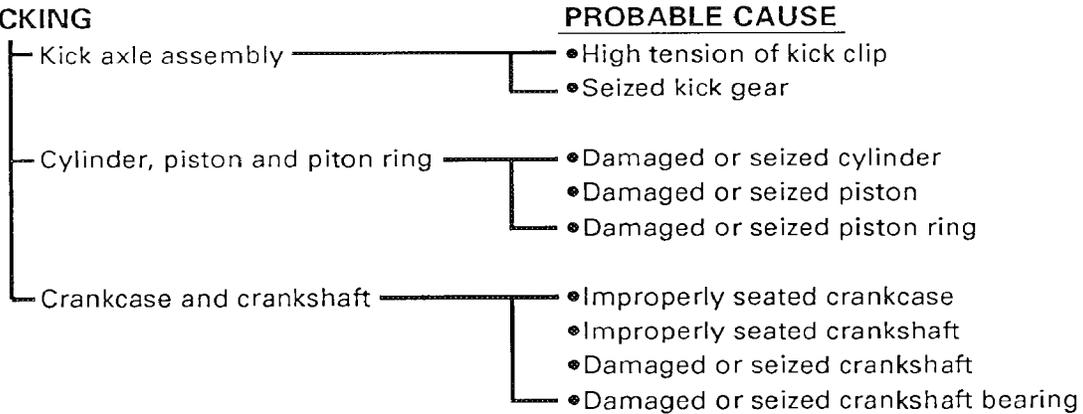


IMPROPER KICKING

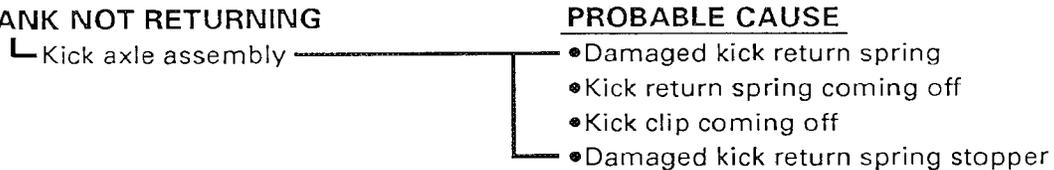
SLIPPING



HARD KICKING



KICK CRANK NOT RETURNING



FAULTY BRAKE

POOR BRAKING EFFECT

└ Drum brake

PROBABLE CAUSE

- Worn brake shoe
- Worn or rusty brake drum
- Improperly adjusted brake free play
- Improper brake cam lever position
- Improper brake shoe position
- Fatigue/Damaged return spring
- Oily or greasy brake shoe
- Oily or greasy brake drum
- Broken brake cable

MALFUNCTION

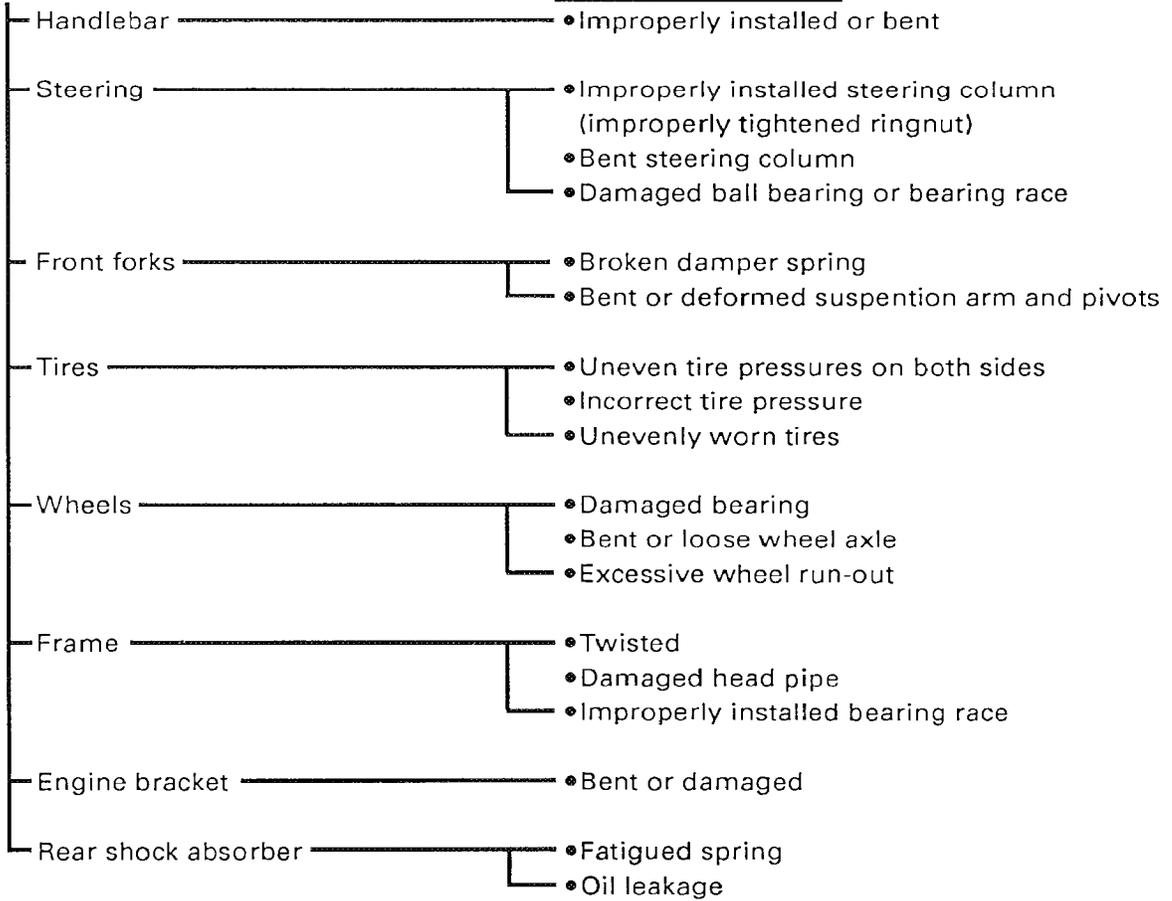
PROBABLE CAUSE

- Bent, deformed or damaged suspension arm
- Bent or deformed suspension pivots
- Damaged damper spring
- Worn or damaged collar
- Suspension oil leakage

INSTABLE HANDLING

INSTABLE HANDLING

PROBABLE CAUSE



FAULTY SIGNAL AND LIGHTING SYSTEM

HEADLIGHT DARK

PROBABLE CAUSE

- Improper bulb
- Too many electric accessories
- Hard charging (broken charging coil)
- Incorrect connection
- Improperly grounded
- Poor contacts (main or light switch)
- Bulb life expires

BULB BURNT OUT

PROBABLE CAUSE

- Improper bulb
- Improperly grounded
- Faulty main and/or light switch
- Bulb life expires

FLASHER DOES NOT LIGHT

PROBABLE CAUSE

- Improperly grounded
- Discharged battery
- Faulty "TURN" switch
- Faulty flasher relay
- Broken wireharness
- Loosely connected coupler
- Bulb burnt out
- Faulty fuse

FLASHER KEEPS ON

PROBABLE CAUSE

- Faulty flasher relay
- Insufficient battery capacity (nearly discharged)
- Bulb burnt out

**FAULTY SIGNAL AND LIGHTING SYSTEM/
OVERHEATING**

**TRBL
SHTG**



FLASHER WINKS SLOWER

PROBABLE CAUSE

- Faulty flasher relay
- Insufficient battery capacity (nearly discharged)
- Improper bulb
- Faulty main and/or flasher switch

FLASHER WINKS QUICKER

PROBABLE CAUSE

- Improper bulb
- Faulty flasher relay

HORN IS INOPERATIVE

PROBABLE CAUSE

- Faulty battery
- Faulty fuse
- Faulty main and/or horn switch
- Improperly adjusted horn
- Faulty horn
- Broken wireharness

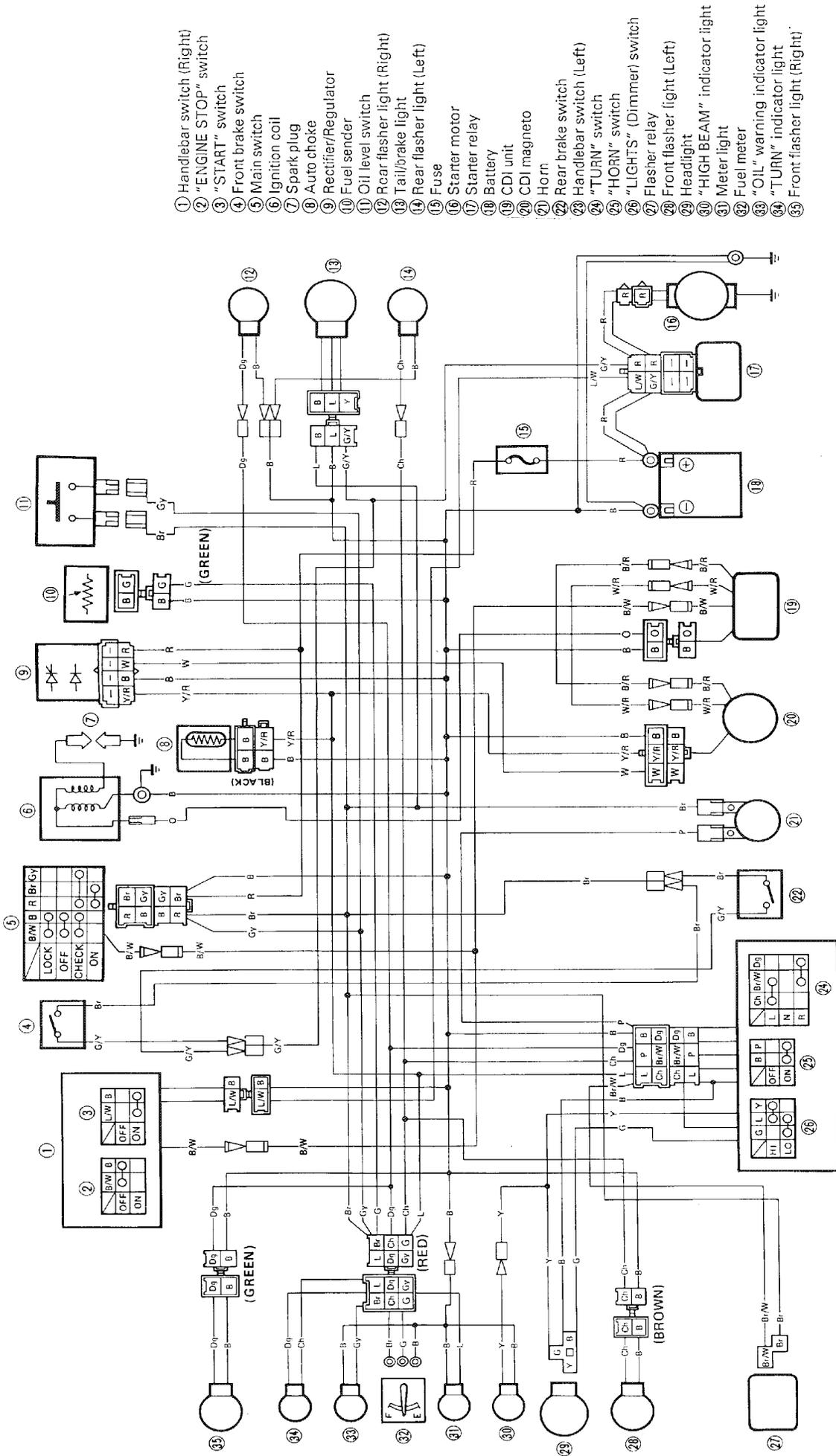
OVERHEATING

OVERHEATING

PROBABLE CAUSE

- Ignition system
 - Improper spark plug gap
 - Improper spark plug heat rang
 - Improper ignition timing
- Faulty system
 - Improper carburetor main jet (improper setting)
 - Clogged air cleaner element
 - Lean mixture (faulty autolube pump settings)
- Compression system
 - Heavy carbon build-up
- Cooling fan
 - Damaged cooling fan
 - Damaged air shrouds
- Brake
 - Dragging brake

CY50B ('91) WIRING DIAGRAM



- ① Handlebar switch (Right)
- ② "ENGINE STOP" switch
- ③ "START" switch
- ④ Front brake switch
- ⑤ Main switch
- ⑥ Ignition coil
- ⑦ Spark plug
- ⑧ Auto choke
- ⑨ Rectifier/Regulator
- ⑩ Fuel sender
- ⑪ Oil level switch
- ⑫ Rear flasher light (Right)
- ⑬ Tail/brake light
- ⑭ Rear flasher light (Left)
- ⑮ Fuse
- ⑯ Starter motor
- ⑰ Starter relay
- ⑱ Battery
- ⑲ CDI unit
- ⑳ CDI magneto
- ㉑ Horn
- ㉒ Rear brake switch
- ㉓ Handlebar switch (Left)
- ㉔ "TURN" switch
- ㉕ "HORN" switch
- ㉖ "LIGHTS" (Dimmer) switch
- ㉗ Flasher relay
- ㉘ Front flasher light (Left)
- ㉙ Headlight
- ㉚ "HIGH BEAM" indicator light
- ㉛ Meter light
- ㉜ Fuel meter
- ㉝ "OIL" warning indicator light
- ㉞ "TURN" indicator light
- ㉟ Front flasher light (Right)

COLOR CODE

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

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