



YAMAHA

2001 - 2005

MOTORCYCLE

SERVICE MANUAL

Model : YJ50RAP, YJ50RAR, YJ50RAS,
YJ50RAT, YJ50RN, YJ50RP, YJ50RR,
YJ50RS, YJ50RT

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**YJ50RN
SERVICE MANUAL
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NOTICE

This manual was produced by the Yamaha Motor Company, Ltd. primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to include all the knowledge of a mechanic in one manual. Therefore, anyone who uses this book to perform maintenance and repairs on Yamaha vehicles should have a basic understanding of mechanics and the techniques to repair these types of vehicles. Repair and maintenance work attempted by anyone without this knowledge is likely to render the vehicle unsafe and unfit for use.

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

NOTE:

Designs and specifications are subject to change without notice.

IMPORTANT MANUAL INFORMATION

Particularly important information is distinguished in this manual by the following.



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 checking 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.

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HOW TO USE THIS MANUAL

This manual is intended as a handy, easy-to-read reference book for the mechanic. Comprehensive explanations of all installation, removal, disassembly, assembly, repair and check procedures are laid out with the individual steps in sequential order.

- ① The manual is divided into chapters. An abbreviation and symbol in the upper right corner of each page indicate the current chapter. Refer to "SYMBOLS".
- ② Each chapter is divided into sections. The current section title is shown at the top of each page, except in Chapter 3 ("PERIODIC CHECKS AND ADJUSTMENTS"), where the sub-section title(s) appears.
- ③ Sub-section titles appear in smaller print than the section title.
- ④ To help identify parts and clarify procedure steps, there are exploded diagrams at the start of each removal and disassembly section.
- ⑤ Numbers are given in the order of the jobs in the exploded diagram. A circled number indicates a disassembly step.
- ⑥ Symbols indicate parts to be lubricated or replaced. Refer to "SYMBOLS".
- ⑦ A job instruction chart accompanies the exploded diagram, providing the order of jobs, names of parts, notes in jobs, etc.
- ⑧ Jobs requiring more information (such as special tools and technical data) are described sequentially.

⑥

②

①

BELT DRIVE

ENG

④

⑤

BELT DRIVE

ENG

REMOVE THE SECONDARY PULLEY AND V-BELT

1. Remove:

- air shroud
- fan

Refer to "GENERATOR AND AUTOLUBE PUMP".

2. Remove:

- clutch housing nut ①
- clutch housing ②

NOTE:
While holding the clutch housing with the sheave holder ③, loosen the clutch housing nut.

Sheave holder
YU-01701

3. Remove:

- secondary pulley ①
- V-belt ②

NOTE:
Pull the secondary sliding sheave out as shown, remove the V-belt from the primary pulley, and then remove the secondary pulley ① along with the V-belt ②.

4. Loosen:

- clutch carrier nut ①

CAUTION:
Do not remove the clutch carrier nut at this stage.

NOTE:
While holding the clutch carrier with the rotor holding tool ④, loosen the clutch carrier nut one full turn with the locknut wrench.







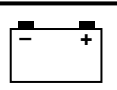















Rotor holding tool
YU-01235
Locknut wrench
90890-01348

⑦

Order	Job/Part	Q'ty	Remarks
	Removing the V-belt, primary and secondary pulley		Remove the parts in the order listed.
	Sheaves cover		Refer to "KICK STARTER".
	Air shroud/fan		Refer to "GENERATOR AND AUTOLUBE PUMP".
1	O-ring	1	
2	Clutch housing	1	
3	Secondary pulley	1	
4	V-belt	1	
5	Conical spring washer	1	
6	Kickstarter one-way clutch	1	
7	Claw washer	1	
8	Primary fixed sheave	1	
9	Washer	1	
10	Spacer	1	

5 - 16

5 - 19

① GEN INFO 	② SPEC 	
③ CHK ADJ 	④ CHAS 	
⑤ ENG 	⑥ CARB 	
⑦ ELEC 	⑧ TRBL SHTG ?	
⑨ 	⑩ 	
⑪ 	⑫ 	
⑬ 	⑭ 	
⑮ 	⑯ 	
⑰ 	⑱ 	⑲ 
⑳ 	㉑ 	㉒ 
㉓ 	㉔ New	

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SYMBOLS

The following symbols are not relevant to every vehicle.

Symbols ① to ⑧ indicate the subject of each chapter.

- ① General information
- ② Specifications
- ③ Periodic checks and adjustments
- ④ Chassis
- ⑤ Engine
- ⑥ Carburetor(s)
- ⑦ Electrical system
- ⑧ Troubleshooting

Symbols ⑨ to ⑯ indicate the following.

- ⑨ Serviceable with engine mounted
- ⑩ Filling fluid
- ⑪ Lubricant
- ⑫ Special tool
- ⑬ Tightening torque
- ⑭ Wear limit, clearance
- ⑮ Engine speed
- ⑯ Electrical data








Symbols ⑰ to ㉒ in the exploded diagrams indicate the types of lubricants and lubrication points.

- ⑰ Engine oil
- ⑱ Gear oil
- ⑲ Molybdenum disulfide oil
- ⑳ Wheel bearing grease
- ㉑ Lithium soap base grease
- ㉒ Molybdenum disulfide grease

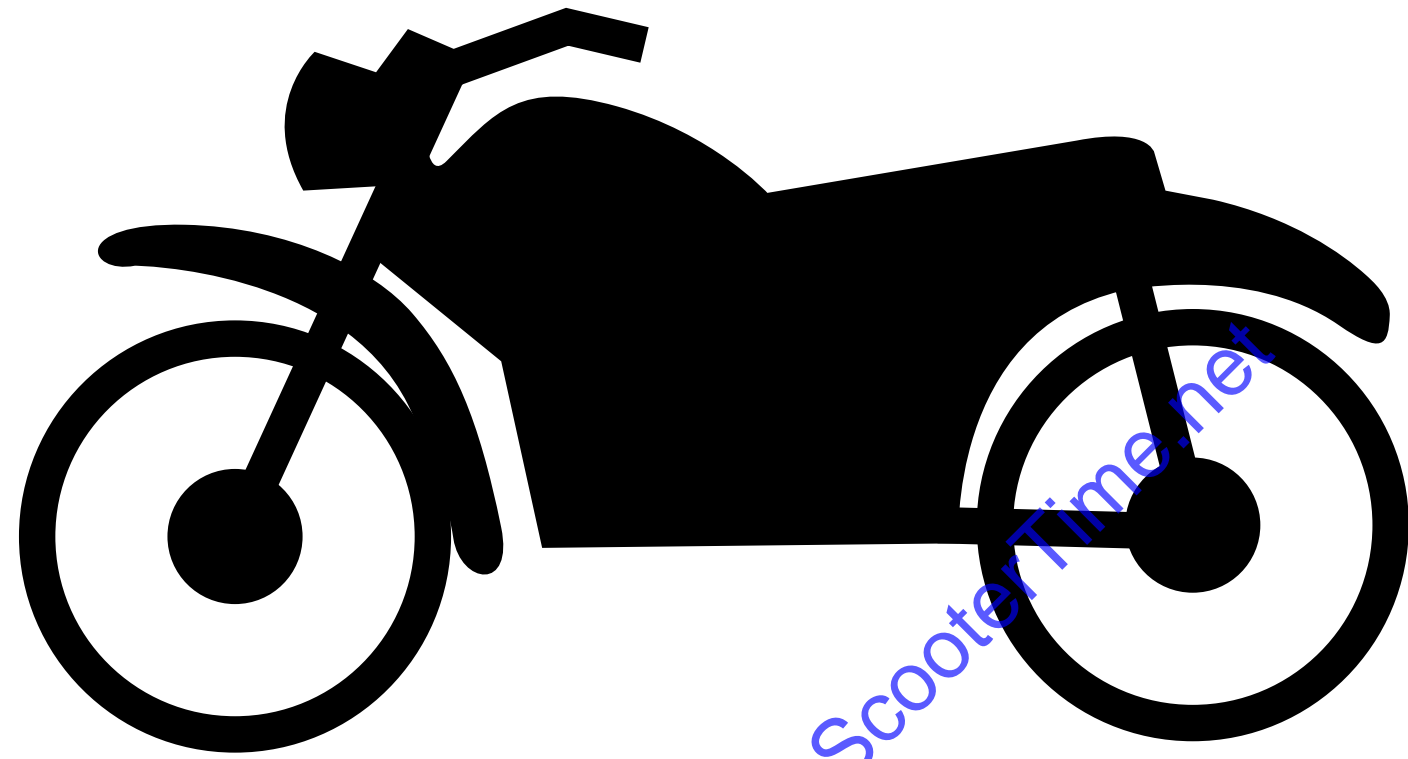
Symbols ㉓ to ㉔ in the exploded diagrams indicate the following.

- ㉓ Apply locking agent (LOCTITE®)
- ㉔ Replace the part

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**GEN
INFO**

1

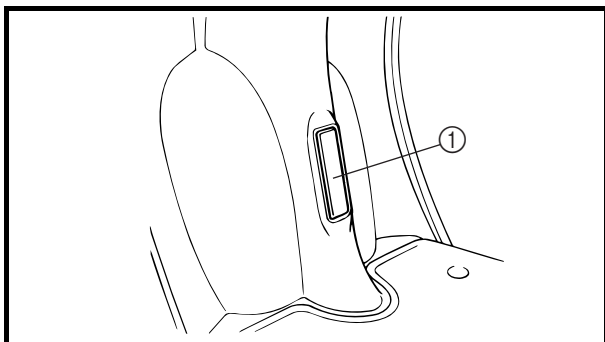
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CHAPTER 1 GENERAL INFORMATION

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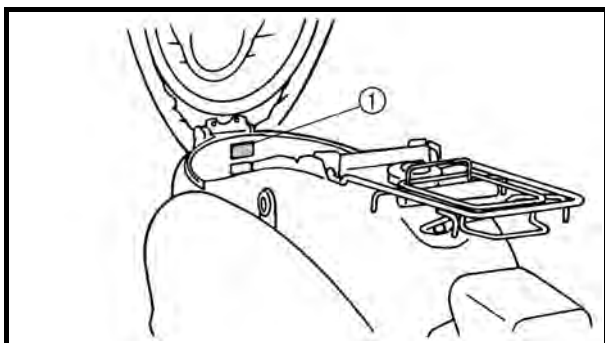
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GENERAL INFORMATION SCOOTER IDENTIFICATION

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VEHICLE IDENTIFICATION NUMBER

The vehicle identification number ① is stamped into the frame.

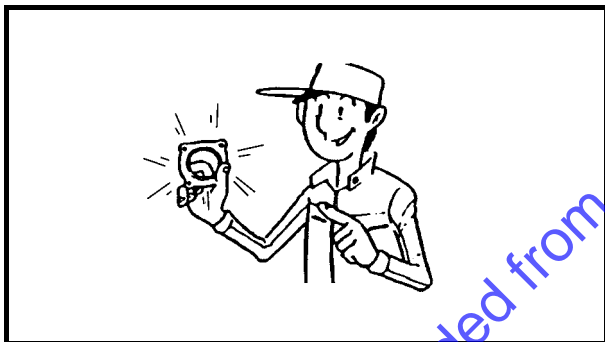
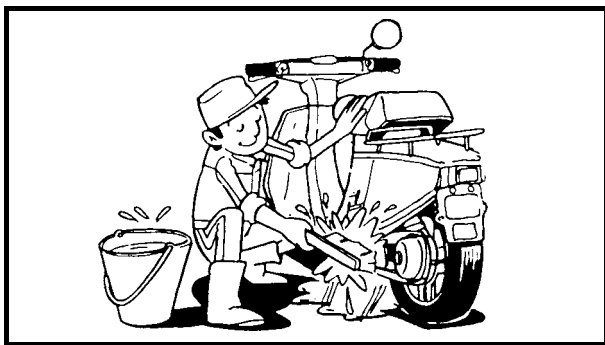


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MODEL CODE

The model code label ① is affixed to the location shown in the figure. Record the information on this label in the space provided. This information will be needed to order spare parts.

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EAS00020

**IMPORTANT INFORMATION
PREPARATION FOR REMOVAL AND
DISASSEMBLY**

1. Before removal and disassembly, remove all dirt, mud, dust and foreign material.
2. Use only the proper tools and cleaning equipment.
Refer to "SPECIAL TOOLS".
3. When disassembling, always keep mated parts together. This includes gears, cylinders, pistons and other parts that have been "mated" through normal wear. Mated parts must always be reused or replaced as an assembly.
4. During disassembly, clean all of the parts and place them in trays in the order of disassembly. This will speed up assembly and allow for the correct installation of all parts.
5. Keep all parts away from any source of fire.

EAS00021

REPLACEMENT PARTS

Use only genuine Yamaha parts for all replacements. Use oil and grease recommended by Yamaha for all lubrication jobs. Other brands may be similar in function and appearance, but inferior in quality.

EAS00022

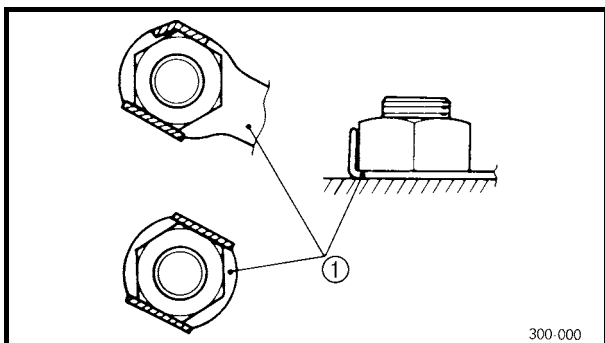
GASKETS, OIL SEALS AND O-RINGS

1. When overhauling the engine, replace all gaskets, seals and O-rings. All gasket surfaces, oil seal lips and O-rings must be cleaned.
2. During reassembly, properly oil all mating parts and bearings and lubricate the oil seal lips with grease.

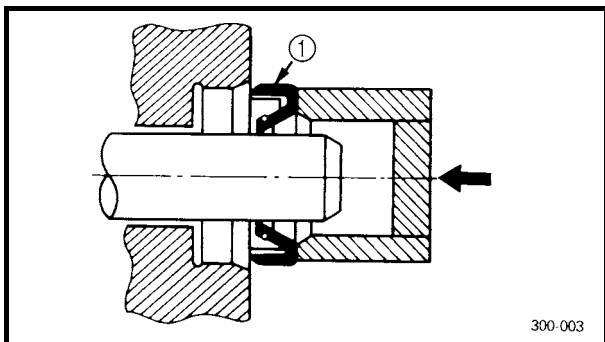
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LOCK WASHERS/PLATES AND COTTER PINS

After removal, replace all lock washers/plates ① and cotter pins. After the bolt or nut has been tightened to specification, bend the lock tabs along a flat of the bolt or nut.



300-000



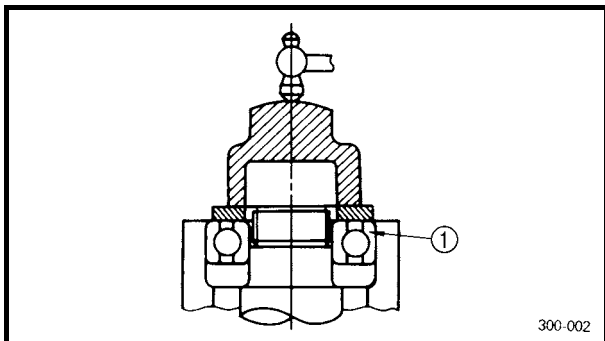
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BEARINGS AND OIL SEALS

Install bearings and oil seals so that the manufacturer's marks or numbers are visible. When installing oil seals, lubricate the oil seal lips with a light coat of lithium soap base grease. Oil bearings liberally when installing, if appropriate.

- ① Oil seal

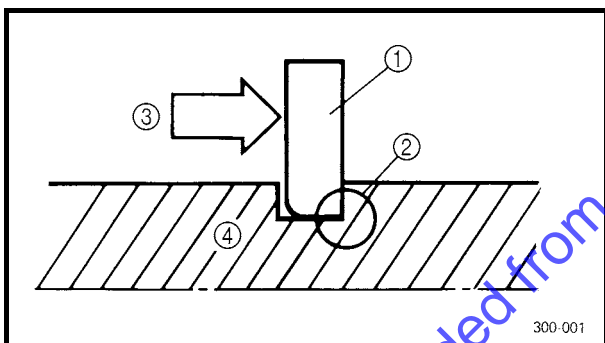


300-002

CAUTION:

Do not spin the bearing with compressed air because this will damage the bearing surfaces.

- ① Bearing



300-001

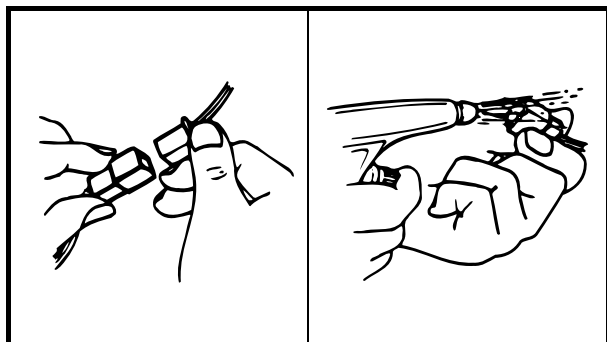
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CIRCLIPS

Before reassembly, check all circlips carefully and replace damaged or distorted circlips. Always replace piston pin clips after one use. When installing a circlip ①, make sure the sharp-edged corner ② is positioned opposite the thrust ③ that the circlip receives.

- ④ Shaft

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CHECKING THE CONNECTIONS

Check the leads, couplers, and connectors for stains, rust, moisture, etc.

1. Disconnect:

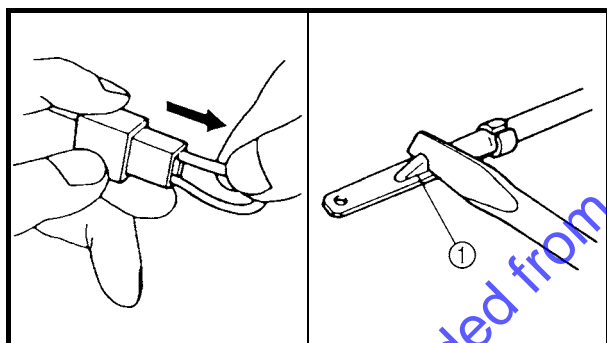
- lead
- coupler
- connector

2. Check:

- lead
- coupler
- connector

Moisture → Dry with an air blower.

Rust/stains → Connect and disconnect several times.



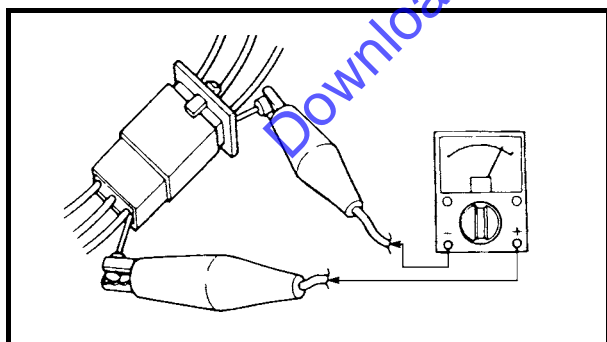
3. Check:

- all connections

Loose connection → Connect properly.

NOTE:

If the pin ① on the terminal is flattened, bend it up.



4. Connect:

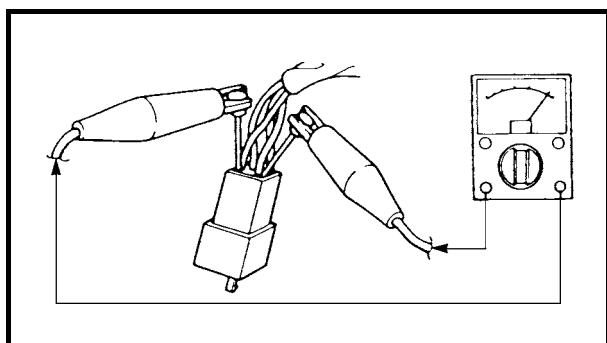
- lead
- coupler
- connector

NOTE:

Make sure all connections are tight.

5. Check:

- continuity (with the pocket tester)



Pocket tester
YU-03112

NOTE:


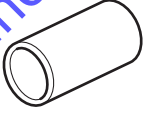
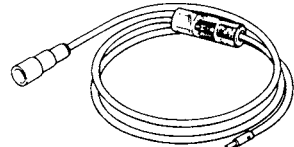
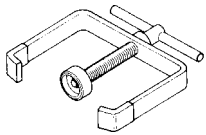
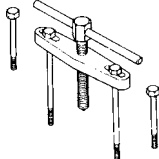
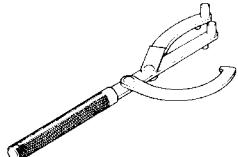

- If there is no continuity, clean the terminals.
- When checking the wire harness, perform steps (1) to (3).
- As a quick remedy, use a contact revitalizer available at most part stores.

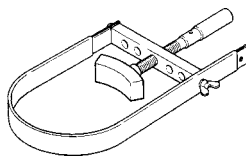
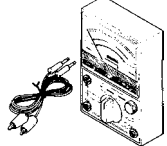
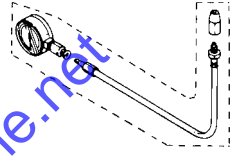
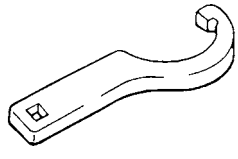

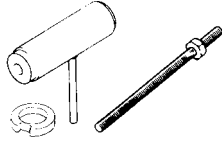

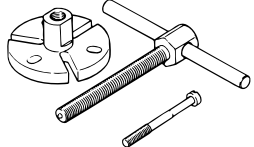
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SPECIAL TOOLS

The following special tools are necessary for complete and accurate tune-up and assembly. Use only the appropriate special tools as this will help prevent damage caused by the use of inappropriate tools or improvised techniques. Special tools, part numbers or both may differ depending on the country.

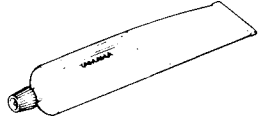
When placing an order, refer to the list provided below to avoid any mistakes.

Tool No.	Tool name/Function	Illustration
YM-01409	Oil seal guide This tool is used to install oil seals.	
YM-01411	Crankshaft installer spacer This tool is used to install the crankshaft.	
YM-34487	Dynamic spark tester This tool is used to check the ignition system components.	
YS-28891	Clutch spring holder This tool is used to disassembly and assembly the secondary pulley.	
YU-01135	Crankcase separating tool This tool is used to remove the crankshaft and to separate the crankcase.	
YU-01235	Rotor holding tool This tool is used to hold the generator rotor when removing or installing the generator rotor bolt.	
YU-01444	Steering nut wrench (45 mm) This tool is used to loosen and tighten the lower steering stem nut.	

Tool No.	Tool name/Function	Illustration
YU-01701	<p>Sheave holder</p> <p>This tool is used to hold the clutch housing when removing or installing the clutch housing nut.</p>	
YU-03112	<p>Pocket tester</p> <p>This tool is used to check the electrical system.</p>	
YU-33223	<p>Compression gauge</p> <p>This tool is used to measure engine compression.</p>	
YU-33975	<p>Steering nut wrench</p> <p>This tool is used to loosen or tighten the steering stem ring nut.</p>	
YU-8036-A	<p>Inductive tachometer</p> <p>This tool is used to check engine speed.</p>	
<p>Crankshaft installer tool set YU-90050 Crankshaft installer pot YU-90058 Crankshaft installer bolt YU-90060</p>	<p>Crankshaft installer tool set Crankshaft installer pot Crankshaft installer bolt</p> <p>These tools are used to install the crankshaft.</p>	
YU-90062	<p>Crankshaft installer adaptor (M10)</p> <p>This tool is used to install the crankshaft.</p>	
YU-90105	<p>Flywheel puller set</p> <p>This tool is used to remove the generator rotor.</p>	

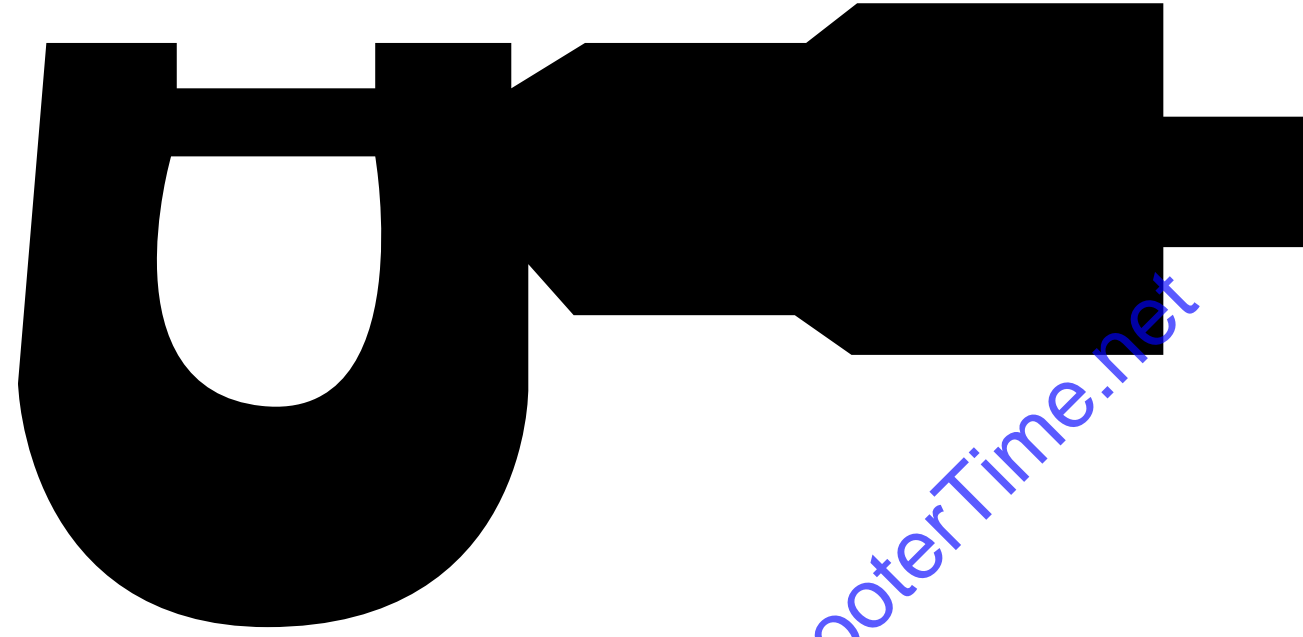
SPECIAL TOOLS



Tool No.	Tool name/Function	Illustration
ACC-1100-15-01	Quick Gasket® This sealant is used to seal to mating surfaces (e.g., crankcase mating surfaces).	 A line drawing of a tube of sealant, oriented horizontally. The tube has a small nozzle at the left end and a slightly wider opening at the right end. The brand name "YAMAHA" is faintly visible on the side of the tube.

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SPEC

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CHAPTER 2 SPECIFICATIONS

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SPECIFICATIONS

GENERAL SPECIFICATIONS

Item	Standard	Limit
Model code	5PP1	----
Dimensions		
Overall length	1,630 mm (64.1 in)	----
Overall width	630 mm (24.8 in)	----
Overall height	1,030 mm (40.5 in)	----
Seat height	715 mm (28.1 in)	----
Wheelbase	1,150 mm (45.3 in)	----
Minimum ground clearance	85 mm (3.3 in)	----
Minimum turning radius	1,600 mm (63 in)	----
Weight		
Wet (with oil and a full fuel tank)	74 kg (163 lb)	----

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ENGINE SPECIFICATIONS

Item	Standard	Limit
Engine		
Engine type	Air-cooled, 2-stroke	----
Induction system	Reed valve	----
Displacement	49 cm ³	----
Cylinder arrangement	Forward inclined single cylinder	----
Bore × stroke	40.0 × 39.2 mm (1.57 × 1.54 in)	----
Compression ratio	7.3 : 1	----
Engine idling speed	1,800 r/min	----
Fuel		
Recommended fuel	Regular unleaded gasoline	----
Fuel tank capacity Total (including reserve)	6 L (5.3 Imp qt, 6.3 US qt)	----
Engine oil		
Lubrication system	Separate lubrication (Yamaha autolube)	----
Oil type or grade	Yamalube 2-cycle oil or 2-stroke engine oil	----
Quantity		
Capacity	1.4 L (1.23 Imp qt, 1.48 US qt)	----
Air filter oil grade	Foam air-filter oil or SAE 10W30SE	----
Transmission		
Recommended oil	Yamalube 4 (10W30) or SAE 10W30 type SE motor oil	----
Periodic oil change	0.1 L (0.09 Imp qt, 0.11 US qt)	----
Total amount	0.11 L (0.1 Imp qt, 0.12 US qt)	----
Starting system type		
	Electric and kick starter	----
Spark plug		
Model (manufacturer) × quantity	BPR7HS (NGK)	----
Spark plug gap	0.6 ~ 0.7 mm (0.02 ~ 0.03 in)	----
Cylinder head		
Max. warpage	----	0.02 mm (0.0008 in)
Cylinder		
Cylinder arrangement	Forward inclined single cylinder	----
Bore × stroke	40.0 × 39.2 mm (1.57 × 1.54 in)	----
Compression ratio	7.3 : 1	----
Bore	39.993 ~ 40.012 mm (1.5745 ~ 1.5753 in)	----
Max. taper	----	0.05 mm (0.002 in)
Max. out-of-round	----	0.05 mm (0.002 in)

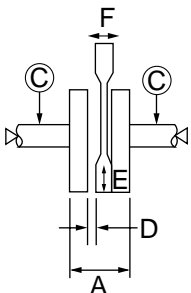
ENGINE SPECIFICATIONS

SPEC



Item	Standard	Limit		
Piston				
Piston-to-cylinder clearance	0.03 ~ 0.05 mm (0.0012 ~ 0.0020 in)	0.10 mm (0.0039 in)		
Diameter D	39.952 ~ 39.969 mm (1.5729 ~ 1.5736 in)	----		
Height H	5 mm (0.2 in)	----		
Oversize 1st	----	----		
Oversize 2nd	----	----		
Piston pin bore (in the piston) Diameter	10.004 ~ 10.015 mm (0.3939 ~ 0.3943 in)	10.045 mm (0.3955 in)		
Offset	0 mm (0 in)	----		
Piston pin Outside diameter	9.996 ~ 10.000 mm (0.3935 ~ 0.3937 in)	9.976 mm (0.3928 in)		
Piston-pin-to-piston-pin-bore clearance	0.004 ~ 0.019 mm (0.00016 ~ 0.00075 in)	0.069 mm (0.0027 in)		
Piston ring Top ring				
Ring type			Keystone	----
Dimensions (B × T)			1.2 × 1.8 mm (0.05 × 0.07 in)	----
End gap (installed)			0.15 ~ 0.35 mm (0.006 ~ 0.014 in)	0.70 mm (0.028 in)
Ring side clearance			0.03 ~ 0.05 mm (0.0012 ~ 0.0020 in)	0.10 mm (0.0039 in)
2nd ring				
Ring type	Keystone	----		
Dimensions (B × T)	1.2 × 1.8 mm (0.05 × 0.07 in)	----		
End gap (installed)	0.15 ~ 0.35 mm (0.006 ~ 0.014 in)	0.70 mm (0.028 in)		
Ring side clearance	0.03 ~ 0.05 mm (0.0012 ~ 0.0020 in)	0.10 mm (0.0039 in)		



Item	Standard	Limit
<p>Crankshaft</p>  <p>Width A Max. runout C Big end side clearance D Big end radial clearance E Small end free play F</p>	<p>37.90 ~ 37.95 mm (1.492 ~ 1.494 in) ---- 0.35 ~ 0.75 mm (0.0138 ~ 0.0295 in) 0.004 ~ 0.017 mm (0.00016 ~ 0.00067 in) 0.4 ~ 0.8 mm (0.02 ~ 0.03 in)</p>	<p>---- 0.03 mm (0.0012 in) 1.0 mm (0.0394 in) ---- ----</p>
<p>Clutch</p> <p>Clutch type Clutch shoe Thickness Clutch shoe spring Free length</p>	<p>Dry, centrifugal automatic 4.0 mm (0.157 in) 29.9 mm (1.18 in)</p>	<p>---- 1.0 mm (0.039 in) ----</p>
<p>Kickstarter</p> <p>Kickstarter type Kickstarter pinion gear clip force</p>	<p>Ratchet 0.15 ~ 0.25 kg (0.34 ~ 0.56 lb)</p>	<p>---- ----</p>
<p>Transmission</p> <p>Transmission type Primary reduction system Primary reduction ratio Secondary reduction system Secondary reduction ratio Operation Single speed automatic</p>	<p>V-belt automatic Helical 48/13 (3.692) Spur gear 42/13 (3.231) Centrifugal automatic type 2.183 ~ 1.050:1</p>	<p>---- ---- ---- ---- ---- ---- ----</p>
<p>Air filter type</p>	<p>Wet element</p>	<p>----</p>

ENGINE SPECIFICATIONS

SPEC


Item	Standard	Limit
Carburetor		
Model (manufacturer) × quantity	Y14P/1 (TEIKEI) × 1	----
Throttle cable free play (at the flange of the throttle grip)	1.5 ~ 3.5 mm (0.06 ~ 0.14 in)	----
ID mark	5LY1 00	----
Main jet	#64	----
Main air jet	2.0	----
Jet needle	3SOC-3/5	----
Needle jet	2.090	----
Cutaway	2.5	----
Pilot jet	#46	----
Bypass 1	0.8	----
Pilot air screw turns out	1-5/8	----
Valve seat size	1.8	----
Starter jet 1	#46	----
Float height	15 ~ 17 mm (0.59 ~ 0.67 in)	----
Reed valve		
Thickness	0.164 ~ 0.176 mm (0.0065 ~ 0.0069 in)	----
Valve stopper height	7.0 ~ 7.4 mm (0.28 ~ 0.29 in)	----
Valve bending limit	0.2 mm (0.008 in)	----
Autolube pump		
Plunger diameter	2.62 mm (0.103 in)	----
Minimum stroke	0.1 mm (0.0039 in)	----
Maximum stroke	0.49 mm (0.0193 in)	----

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CHASSIS SPECIFICATIONS

Item	Standard	Limit
Frame		
Frame type	Steel tube underbone	----
Caster angle	25°	----
Trail	71 mm (2.8 in)	----
Front wheel		
Wheel type	Panel wheel	----
Rim		
Size	10 × 2.15	----
Material	Steel	----
Wheel travel	60 mm (2.36 in)	----
Wheel runout		
Max. radial wheel runout	----	1.0 mm (0.04 in)
Max. lateral wheel runout	----	1.0 mm (0.04 in)
Rear wheel		
Wheel type	Panel wheel	----
Rim		
Size	10 × 2.15	----
Material	Steel	----
Wheel travel	46 mm (1.81 in)	----
Wheel runout		
Max. radial wheel runout	----	1.0 mm (0.04 in)
Max. lateral wheel runout	----	1.0 mm (0.04 in)
Front tire		
Tire type	Tubeless	----
Size	80/90-10 (34J)	----
Model (manufacturer)	MB38/C-922 (INOUE/CHENG SHIN)	----
Tire pressure (cold)		
0 ~ 90 kg (0 ~ 198 lb)	150 kPa (1.50 kg/cm ² , 21.8 psi)	----
Min. tire tread depth	----	1.0 mm (0.04 in)
Rear tire		
Tire type	Tubeless	----
Size	80/90-10 (34J)	----
Model (manufacturer)	MB38/C-922 (INOUE/CHENG SHIN)	----
Tire pressure (cold)		
0 ~ 90 kg (0 ~ 198 lb)	175 kPa (1.75 kg/cm ² , 25.4 psi)	----
Min. tire tread depth	----	1.0 mm (0.04 in)

CHASSIS SPECIFICATIONS

SPEC


Item	Standard	Limit
Front brake		
Brake type	Drum brake	----
Operation	Right-hand operation	----
Brake lever free play (at lever end)	10 ~ 20 mm (0.39 ~ 0.79 in)	----
Drum brake type	Leading, trailing	----
Brake drum inside diameter	110 mm (4.33 in)	110.5 mm (4.35 in)
Lining thickness	4 mm (0.16 in)	2 mm (0.08 in)
Rear brake		
Brake type	Drum brake	----
Operation	Left-hand operation	----
Brake lever free play (at lever end)	10 ~ 20 mm (0.39 ~ 0.79 in)	----
Drum brake type	Leading, trailing	----
Brake drum inside diameter	110 mm (4.33 in)	110.5 mm (4.35 in)
Lining thickness	4 mm (0.16 in)	2 mm (0.08 in)
Front suspension		
Suspension type	Bottom link fork	----
Front fork type	Coil spring/oil damper	----
Front fork travel	40 mm (1.57 in)	----
Spring		
Free length	156.5 mm (6.16 in)	153.4 mm (6.04 in)
Spring rate (K1)	12.8 N/mm (1.28 kgf/mm, 73.09 lb/in)	----
Spring stroke (K1)	0 ~ 20 mm (0 ~ 0.79 in)	----
Spring rate (K2)	30.4 N/mm (3.04 kgf/mm, 173.58 lb/in)	----
Spring stroke (K2)	20 ~ 30 mm (0.79 ~ 1.18 in)	----
Spring rate (K3)	67.6 N/mm (6.76 kgf/mm, 386 lb/in)	----
Spring stroke (K3)	30 ~ 40 mm (1.18 ~ 1.57 in)	----
Optional spring available	No	----
Steering		
Steering bearing type	Ball and race bearing	----

CHASSIS SPECIFICATIONS

SPEC



Item	Standard	Limit
Rear suspension		
Suspension type	Unit swing	----
Rear shock absorber assembly type	Coil spring/oil damper	----
Rear shock absorber assembly travel	45 mm (1.77 in)	----
Spring		
Free length	173.5 mm (6.83 in)	170.0 mm (6.69 in)
Installed length	166.5 mm (6.56 in)	----
Spring rate (K1)	34.5 N/mm (3.45 kgf/mm, 197 lb/in)	----
Spring stroke (K1)	0 ~ 45 mm (0 ~ 1.77 in)	----
Optional spring available	No	----

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ELECTRICAL SPECIFICATIONS

Item	Standard	Limit
System voltage	12 V	----
Ignition system		
Ignition system type	DC.CDI	----
Ignition timing	14° BTDC at 5,000 r/min	----
Advancer type	Fixed	----
Pickup coil resistance/color	248 ~ 372 Ω/W/L–W/R	----
CDI unit model (manufacturer)	5BM (YAMAHA)	----
Ignition coil		
Model (manufacturer)	2JN (YAMAHA)	----
Minimum ignition spark gap	6 mm (0.24 in)	----
Primary coil resistance	0.18 ~ 0.28 Ω	----
Secondary coil resistance	6.32 ~ 9.48 kΩ	----
Spark plug cap		
Material	Resin	----
Resistance	5 kΩ	----
Charging system		
System type	AC magneto	----
Model (manufacturer)	F5BM (YAMAHA)	----
Standard output	14 V/120 W at 5,000 r/min	----
Stator coil resistance (W-B)	0.29 ~ 0.43 Ω	----
Voltage regulator		
Regulator type	Semiconductor, short circuit	----
Model (manufacturer)	SH671-12 (SHINDENGEN)	----
No-load regulated voltage (DC)	14.0 ~ 15.0 V	----
No-load regulated voltage (AC)	12.3 ~ 13.3 V	----
Rectifier		
Model (manufacturer)	SH671-12 (SHINDENGEN)	----
Rectifier capacity (DC)	8 A	----
Rectifier capacity (AC)	12 A	----
Withstand voltage	200 V	----
Battery		
Battery type	GT4B-5	----
Battery voltage/capacity	12 V/2.5 AH	----
Specific gravity	1.350	----
Headlight type	Halogen bulb	----
Indicator light type × quantity	Bulb type × 3	----
Bulbs (voltage/wattage × quantity)		
Headlight	12 V 35 W/35 W × 1	----
Tail/brake light	12 V 27 W/8 W × 1	----
Front turn signal light	12 V 10 W × 2	----
Rear turn signal light	12 V 10 W × 2	----
Meter light	12 V 1.7 W × 1	----
Fuel level indicator light	14 V 1.4 W × 1	----
High beam indicator light	12 V 1.7 W × 1	----
Oil level indicator light	12 V 1.7 W × 1	----
Turn indicator light	14 V 3 W × 1	----

ELECTRICAL SPECIFICATIONS

SPEC



Item	Standard	Limit
Electric starting system		
System type	Constant mesh	----
Starter motor		
Model (manufacturer)	5BM (YAMAHA)	----
Power output	0.14 kW	----
Brush		
Overall length	6.1 mm (0.24 in)	0.9 mm (0.04 in)
Spring force	2.32 ~ 3.48 N (236.5 ~ 355.0 gf, 8.35 ~ 12.53 oz)	----
Armature coil resistance	0.065 ~ 0.079 Ω	----
Commutator diameter	15.8 mm (0.62 in)	14.8 mm (0.58 in)
Mica undercut	1.15 mm (0.05 in)	----
Starter relay		
Model (manufacturer)	G8MS-1A48T-L3-Y28 (OMRON)	----
Amperage	20 A	----
Coil resistance	54 ~ 66 Ω	----
Horn		
Horn type	Plane	----
Model (manufacturer) \times quantity	GF-12 (NIKKO) \times 1	----
Max. amperage	1.5 A	----
Performance	95 ~ 115 db (2 m)	----
Coil resistance	4.3 ~ 4.8 Ω	----
Turn signal relay		
Relay type	Condenser	----
Model (manufacturer)	FZ222SD (DENSO)	----
Self-cancelling device built-in	No	----
Turn signal blinking frequency	75 ~ 95 cycles/min.	----
Wattage	10 W \times 2 + 3.4 W	----
Oil level gauge model (manufacturer)	53 L (ASTI)	----
Fuel level gauge		
Model (manufacturer)	4JP (NIPPON SEIKI)	----
Sender unit resistance (full)	4 ~ 10 Ω	----
Sender unit resistance (empty)	90 ~ 100 Ω	----
Fuses (amperage \times quantity)		
Main fuse	7.5 A \times 1	----

CONVERSION TABLE/ GENERAL TIGHTENING TORQUE SPECIFICATIONS



EAS00028

CONVERSION TABLE

All specification data in this manual are listed in SI and METRIC UNITS.

Use this table to convert METRIC unit data to IMPERIAL unit data.

Ex.

METRIC		MULTIPLIER	=	IMPERIAL
** mm	×	0.03937	=	** in
2 mm	×	0.03937	=	0.08 in

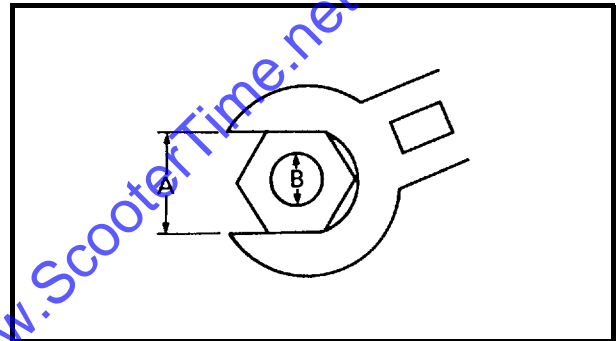
CONVERSION TABLE

METRIC TO IMPERIAL			
	Metric unit	Multiplier	Imperial unit
Tightening torque	m·kg	7.233	ft·lb
	m·kg	86.794	in·lb
	cm·kg	0.0723	ft·lb
	cm·kg	0.8679	in·lb
Weight	kg	2.205	lb
	g	0.03527	oz
Speed	km/hr	0.6214	mph
Distance	km	0.6214	mi
	m	3.281	ft
	m	1.094	yd
	cm	0.3937	in
	mm	0.03937	in
Volume/ Capacity	cc (cm ³)	0.03527	oz (IMP liq.)
	cc (cm ³)	0.06102	cu-in
	lt (liter)	0.8799	qt (IMP liq.)
	lt (liter)	0.2199	gal (IMP liq.)
Misc.	kg/mm	55.997	lb/in
	kg/cm ²	14.2234	psi (lb/in ²)
	Centigrade (°C)	9/5 + 32	Fahrenheit (°F)

EAS00030

GENERAL TIGHTENING TORQUE SPECIFICATIONS

This chart specifies tightening torques for standard fasteners with a standard ISO thread pitch. Tightening torque specifications for special components or assemblies are provided for each chapter of this manual. To avoid warpage, tighten multi-fastener assemblies in a crisscross pattern and progressive stages until the specified tightening torque is reached. Unless otherwise specified, tightening torque specifications require clean, dry threads. Components should be at room temperature.



A: Width across flats


B: Thread diameter

A (nut)	B (bolt)	General tightening torques		
		Nm	m·kg	ft·lb
10 mm	6 mm	6	0.6	4.3
12 mm	8 mm	15	1.5	11
14 mm	10 mm	30	3.0	22
17 mm	12 mm	55	5.5	40
19 mm	14 mm	85	8.5	61
22 mm	16 mm	130	13.0	94

TIGHTENING TORQUES



TIGHTENING TORQUES ENGINE TIGHTENING TORQUES

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m·kgf	ft·lb	
Spark plug		M14	1	20	2.0	14	
Cylinder head	Nut	M7	4	14	1.4	10	
Cylinder head	Stud bolt	M7	4	10	1.0	7	
Air shroud	Screw	M6	2	7	0.7	5.1	
Air shroud	Screw	M6	1	2	0.2	1.4	
Fan	Screw	M6	3	7	0.7	5.1	
Autolube pump	Bolt	M5	1	6	0.6	4.3	
Air filter	Screw	M6	2	9	0.9	6.5	
Exhaust pipe	Bolt	M6	2	13	1.3	9.4	
Muffler	Bolt	M8	2	28	2.8	20	
Muffler protector	Screw	M2	2	9	0.9	6.5	
Right crankcase	Screw	M6	6	9	0.9	6.5	
Bearing retainer (right crankcase)	Screw	M6	1	7	0.7	5.1	
Transmission cover	Screw	M6	5	9	0.9	6.5	
Sheave cover	Screw	M6	10	9	0.9	6.5	
Air filter case	Screw	M6	2	9	0.9	6.5	
Starter motor ground lead	Screw	M6	1	7	0.7	5.1	
Transmission oil drain bolt	Bolt	M8	1	18	1.8	13	
Oil filler plug		M14	1	3	0.3	2.2	
Idle gear plate	Screw	M6	2	8	0.8	5.8	
Kickstarter crank	Bolt	M6	1	11	1.1	8.0	
Starter motor	Bolt	M6	2	13	1.3	9.4	
Clutch housing	Nut	M10	1	40	4.0	29	
Bearing retainer (transmission cover)	Screw	M6	1	7	0.7	5.1	
Primary sheave	Nut	M10	1	30	3.0	22	
Stator coil assembly	Screw	M6	2	8	0.8	5.8	
Generator rotor	Nut	M10	1	38	3.8	27	
Clutch carrier	Nut	M28	1	50	5.0	36	
Intake manifold	Bolt	M6	4	11	1.1	8.0	

TIGHTENING TORQUES

SPEC




















CHASSIS TIGHTENING TORQUES

Part to be tightened	Thread size	Tightening torque			Remarks
		Nm	m.kgf	ft.lb	
Engine mounting:					
Engine mounting bolt/nut	M12	84	8.4	61	
Rear shock absorber and engine	M8	15	1.5	11	
Engine bracket and frame	M10	46	4.6	33	
Tail reinforcement	M6	10	1.0	7.2	
Rear shock absorber and frame	M10	30	3.0	22	
Lower handlebar holder bracket	M10	43	4.3	37	
Upper race	M45 (BCI)	7	0.7	5.1	
Upper steering stem ring nut	M25 (BCI)	33	3.3	24	
Fork and relay arm assembly	M8	19	1.9	13	
Front shock absorber (upper)	M8	19	1.9	13	
Front shock absorber (lower)	M8	19	1.9	13	
Front turn signal light	M12	7	0.7	5.1	
Fuel tank (upper)	M6	7	0.7	5.1	
Fuel tank (lower)	M6	10	1.0	7.2	
Fuel sender and fuel tank	M5	3	0.3	2.2	
Seat lock assembly	M6	7	0.7	5.1	
Carrier (upper)	M6	10	1.0	7.2	
Carrier (lower)	M8	15	1.5	11	
Storage box	M6	8	0.8	5.8	
License plate bracket and rear turn signal bracket	M6	12	1.2	8.7	
Rear turn signal bracket and tail/brake light	M6	7	0.7	5.1	
Tail cover and rear turn signal bracket	M6	12	1.2	8.7	
Rear turn signal light	M12	7	0.7	5.1	
Front fender and reflector	M5	3	0.3	2.2	
Front wheel axle	M10	48	4.8	35	
Front brake camshaft lever	M5	4	0.4	2.9	
Rear wheel axle nut	M14	105	10.5	75	
Rear brake camshaft lever	M6	7	0.7	5.1	
Rear brake pivot pin	M8	16	1.6	12	
Speedometer cable	M12	3	0.3	2.2	
Upper handlebar holder	M6	10	1.0	7.2	

LUBRICATION POINTS AND LUBRICANT TYPES

ENGINE

Lubrication Point	Symbol
Oil seal lips	
O-rings	
Bearings	
Piston surface	
Piston pin	
Cylinder	
Transmission case (bearing)	
Right crankcase (bearing retainer)	
Autolube pump	
Starter wheel gear	
Idle gear plate	
Secondary drive gear	
Kickstarter pinion gear	
Drive axle	
Pump drive gear	
Main axle	
Main axle (bearing)	

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LUBRICATION POINTS AND LUBRICANT TYPES



CHASSIS

Lubrication Point	Symbol
Oil seal lips	
O-rings	
Bearings	
Speedometer drive gear	
Front brake camshaft	
Front brake cable	
Throttle cable	
Tube guide (throttle grip) inner surface	
Upper steering stem ring nut	
Upper bearing outer race	
Lower bearing outer race	
Rear brake camshaft	
Centerstand	

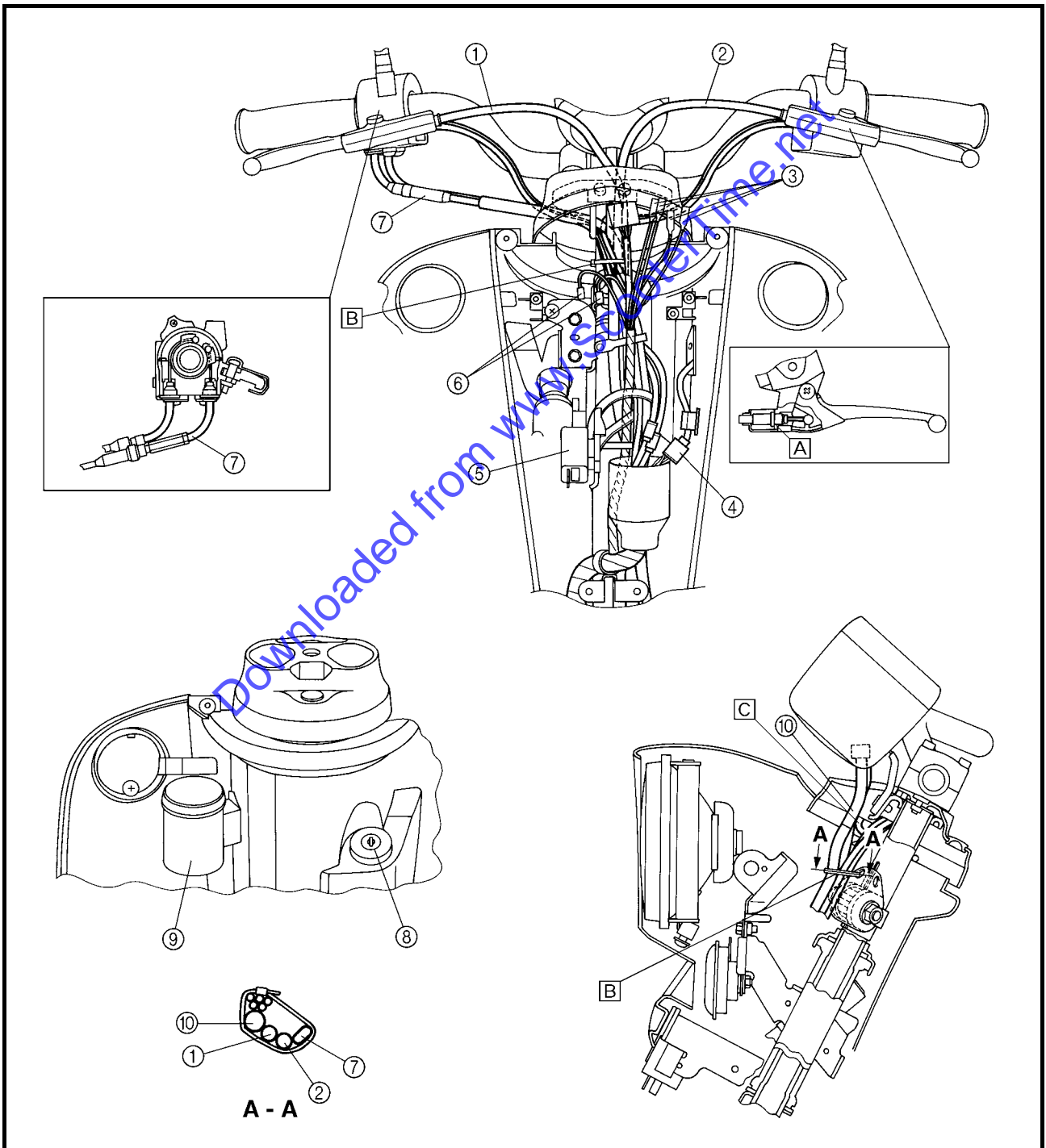
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CABLE ROUTING

- ① Front brake cable
- ② Rear brake cable
- ③ Front turn signal leads
- ④ Fuel level gauge coupler
- ⑤ Flasher relay
- ⑥ Horn lead
- ⑦ Throttle cable
- ⑧ Main switch
- ⑨ Fuel gauge
- ⑩ Speedometer cable

- A Push the brake cable flange in until it contacts the lever holder.
- B Fasten the handlebar switch leads, brake light switch leads, meter light lead, speedometer cable, brake cables and throttle cable with a plastic locking tie.
- C Pass the left handlebar switch lead, front brake light switch lead, and throttle cable over the cable guide.



CABLE ROUTING

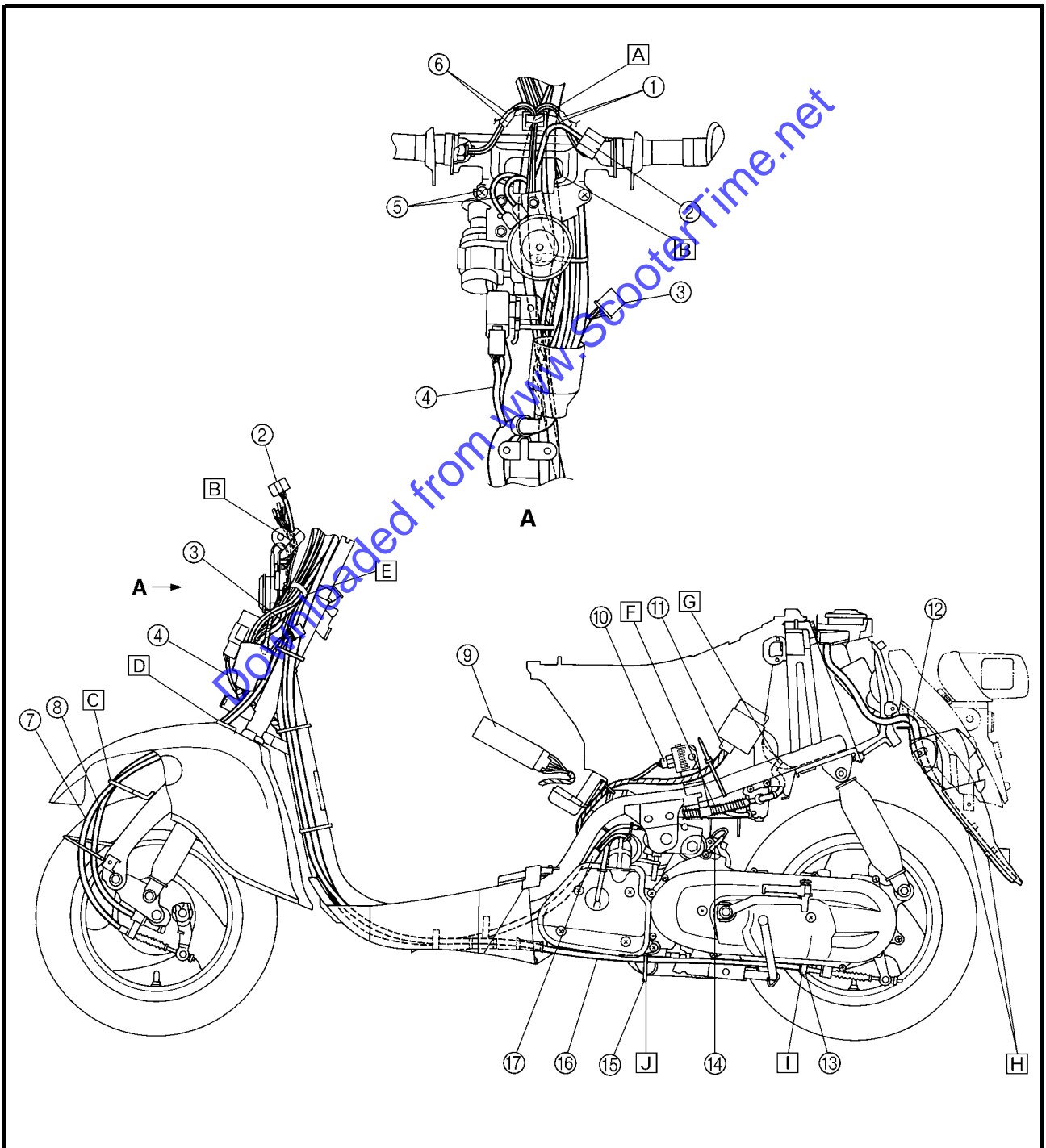
SPEC



- ① Front turn signal leads (left)
- ② Headlight coupler
- ③ Fuel level gauge coupler
- ④ Flasher relay lead
- ⑤ Horn lead
- ⑥ Front turn signal leads (right)
- ⑦ Front brake cable
- ⑧ Speedometer cable
- ⑨ Battery
- ⑩ Rectifier/regulator coupler
- ⑪ CDI unit lead coupler
- ⑫ Fuel overflow hose

- ⑬ Crankcase breather hose
- ⑭ Ground lead
- ⑮ Carburetor overflow hose
- ⑯ Rear brake cable
- ⑰ Throttle cable

- [A] Fasten the turn signal light leads with the clamp.
- [B] Pass the front turn signal light leads, headlight coupler, and horn lead through the hole of the front turn signal light bracket.

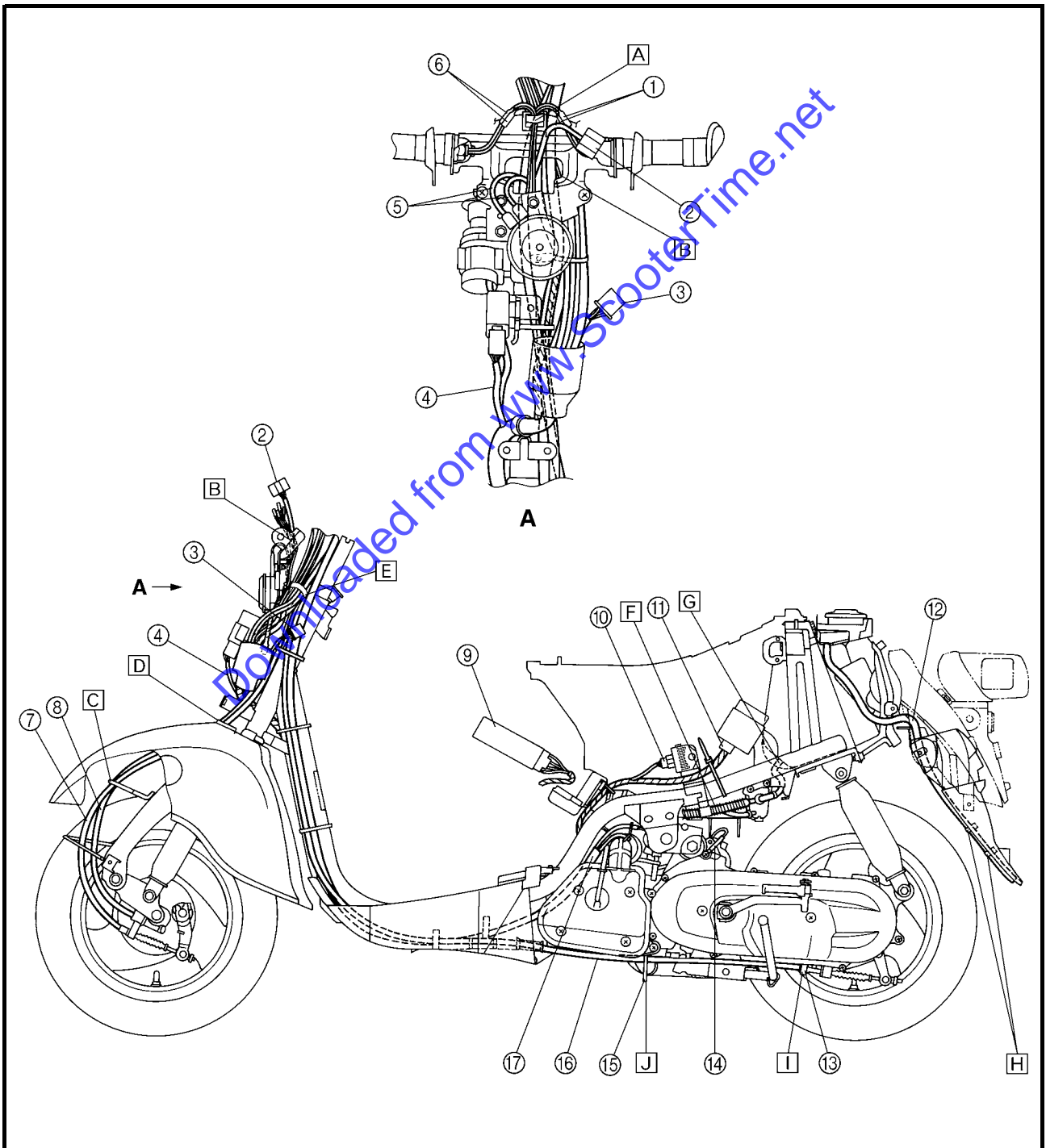


CABLE ROUTING

SPEC

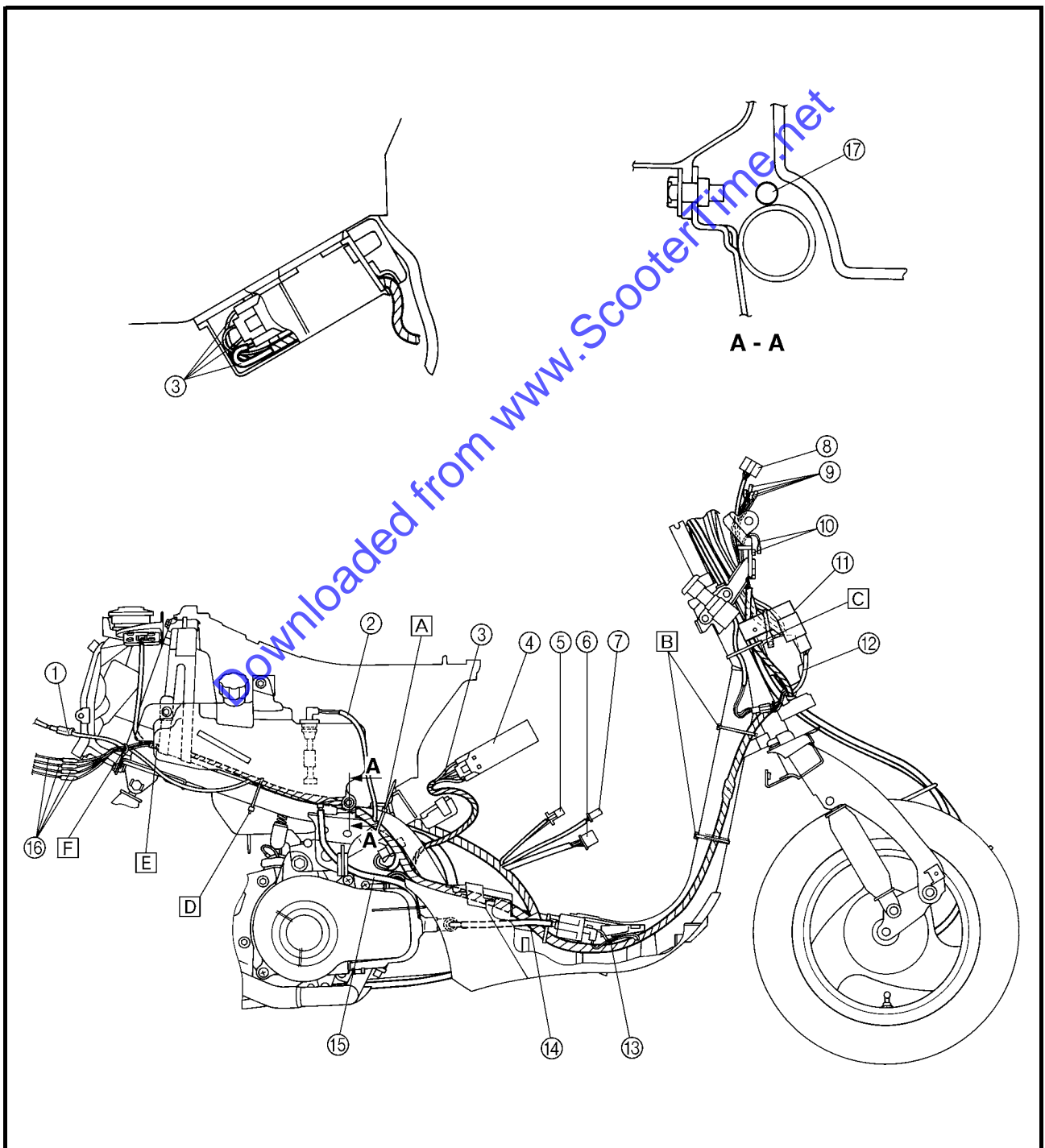


- C Pass the front brake cable and speedometer cable through the cable guide.
- D Pass the front brake cable and speedometer cable through the hole of the front fender.
- E Fasten the speedometer cable, front brake cable, handlebar switch leads and brake light switch leads with a plastic band.
- F Pass the vacuum hose and fuel hose through the holder. Be sure to pass the vacuum hose through the holder first.
- G Install the fuel tank so that the paint mark on the fuel hose is facing up.
- H Pass the fuel overflow hose through the guide.
- I Pass the crankcase breather hose between the crankcase and rear brake cable.
- J Pass the carburetor overflow hose on the outside of the rear brake cable.



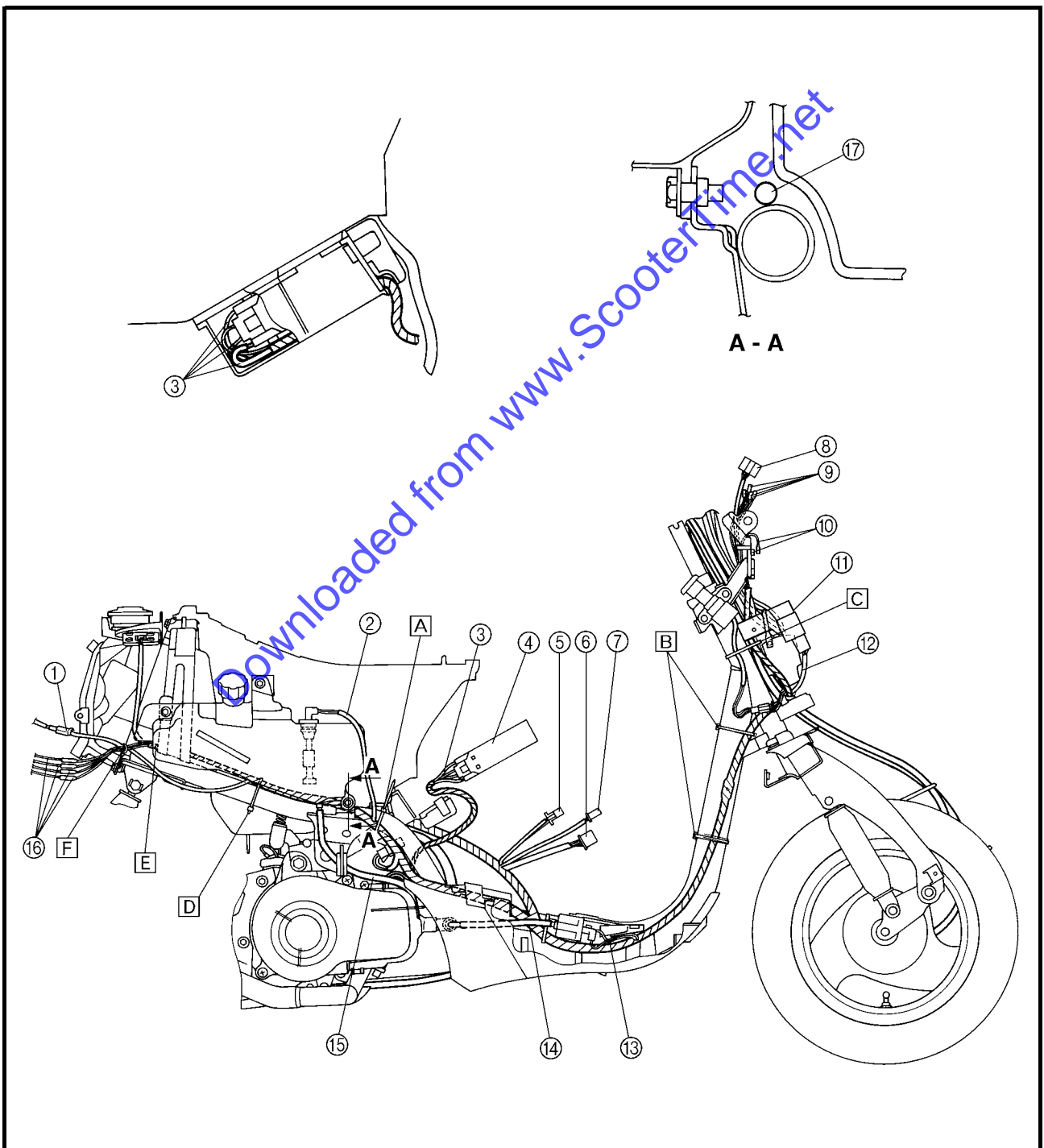


- ① Tail/brake light coupler
- ② Oil level switch lead
- ③ Battery leads
- ④ Battery
- ⑤ Starter motor coupler
- ⑥ AC magneto coupler
- ⑦ Auto choke coupler
- ⑧ Headlight coupler
- ⑨ Front turn signal leads
- ⑩ Horn lead
- ⑪ Main switch lead
- ⑫ Flasher relay lead
- ⑬ Ignition coil lead
- ⑭ Spark plug lead
- ⑮ Oil hose
- ⑯ Rear turn signal leads
- ⑰ Wire harness





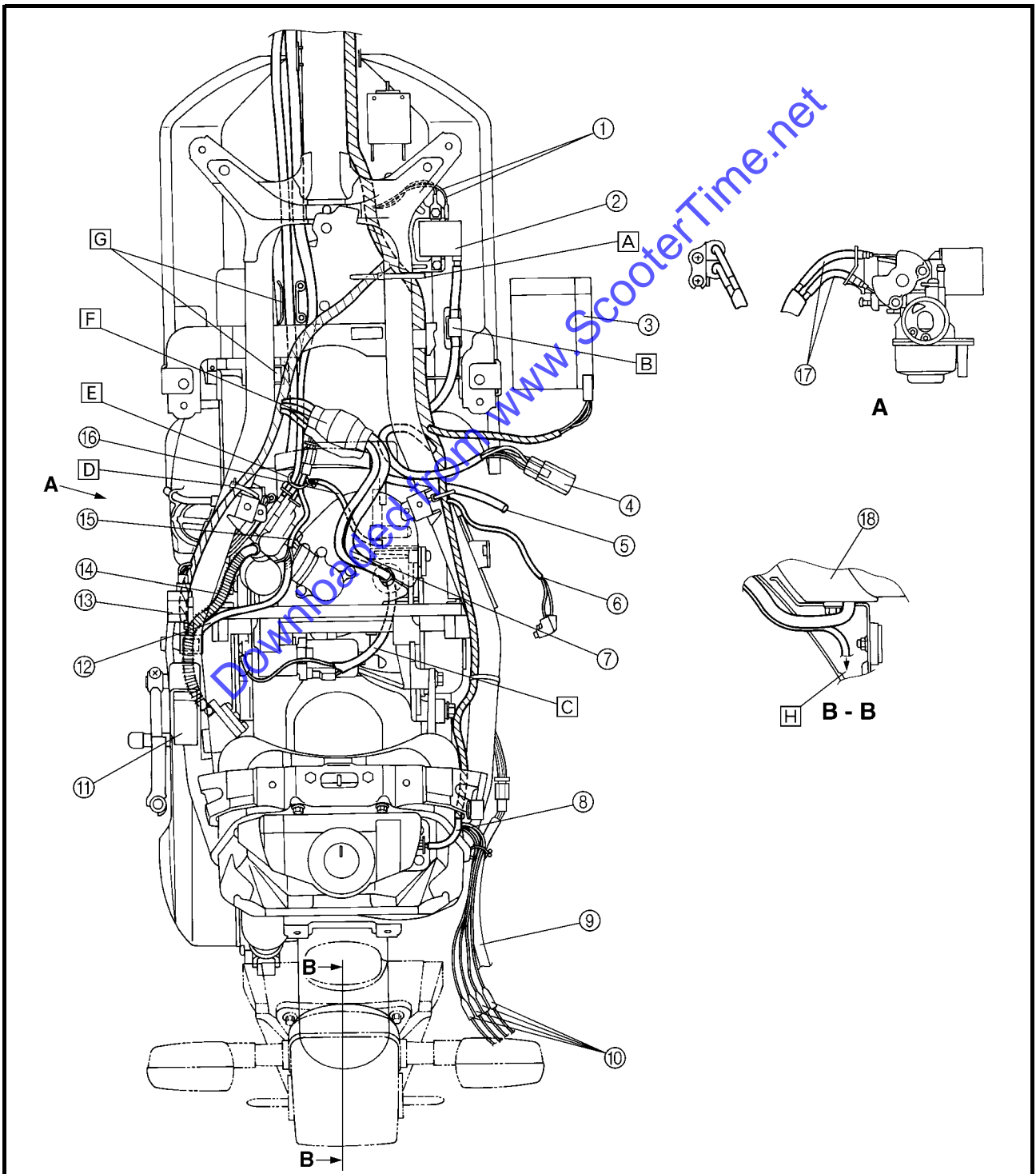
- A Fasten the wire harness with a plastic locking tie.
- B Fasten the wire harness, throttle cable and rear brake cable with plastic locking tie.
- C Fasten the main switch lead with a plastic locking tie.
- D Fasten the wire harness with a plastic locking tie.
- E Pass the wire harness on the inside of the seat bracket.
- F Pass one end of a plastic clip through the hole of the fuel tank flange, and then fasten the tail/ brake light lead and rear turn signal light leads with the clip.





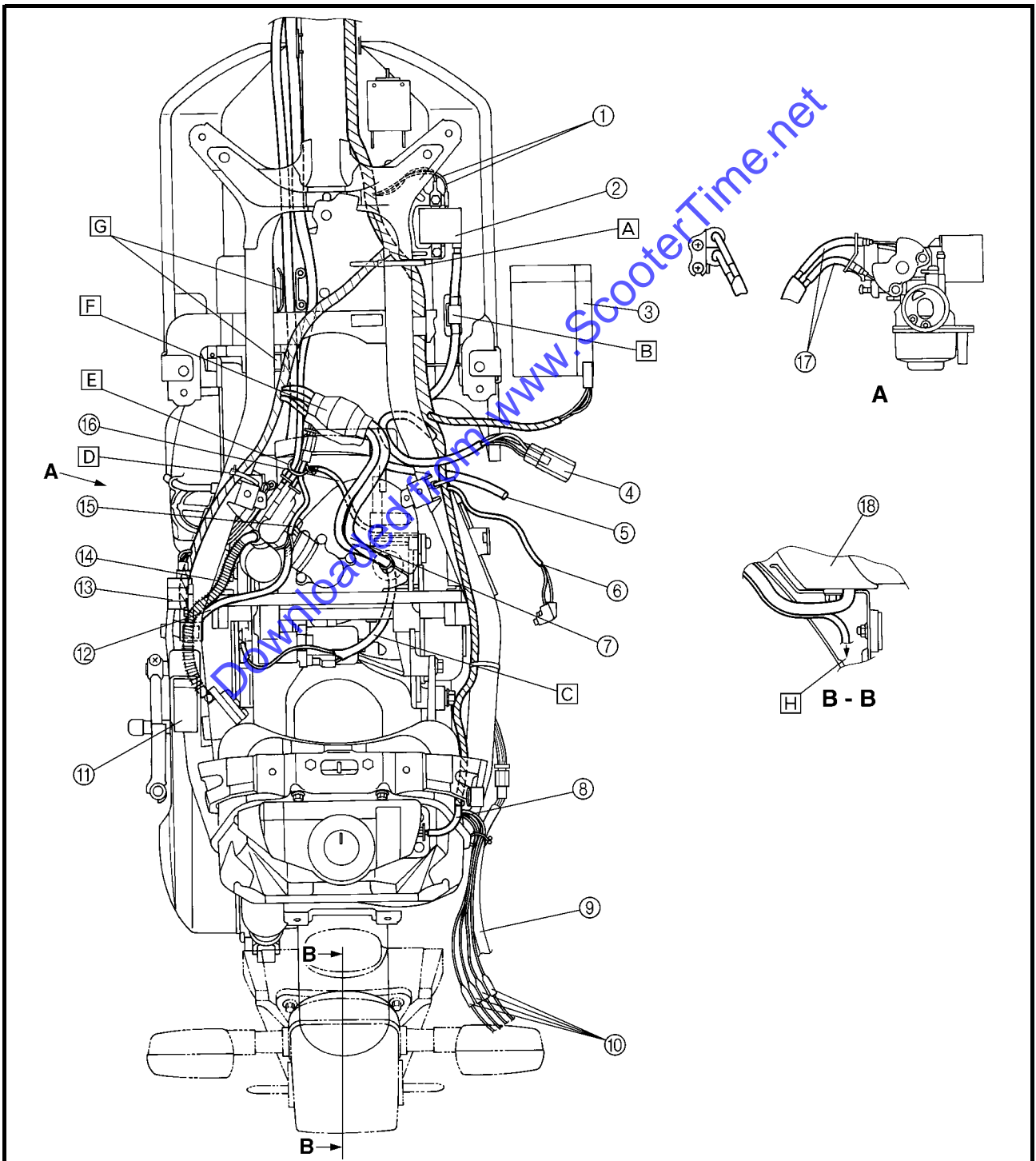
- ① Ignition coil lead
- ② Ignition coil
- ③ Battery
- ④ Starter relay
- ⑤ Oil hose
- ⑥ Oil level switch lead
- ⑦ AC magneto lead
- ⑧ Fuel sender lead
- ⑨ Tail/brake light lead
- ⑩ Rear turn signal leads

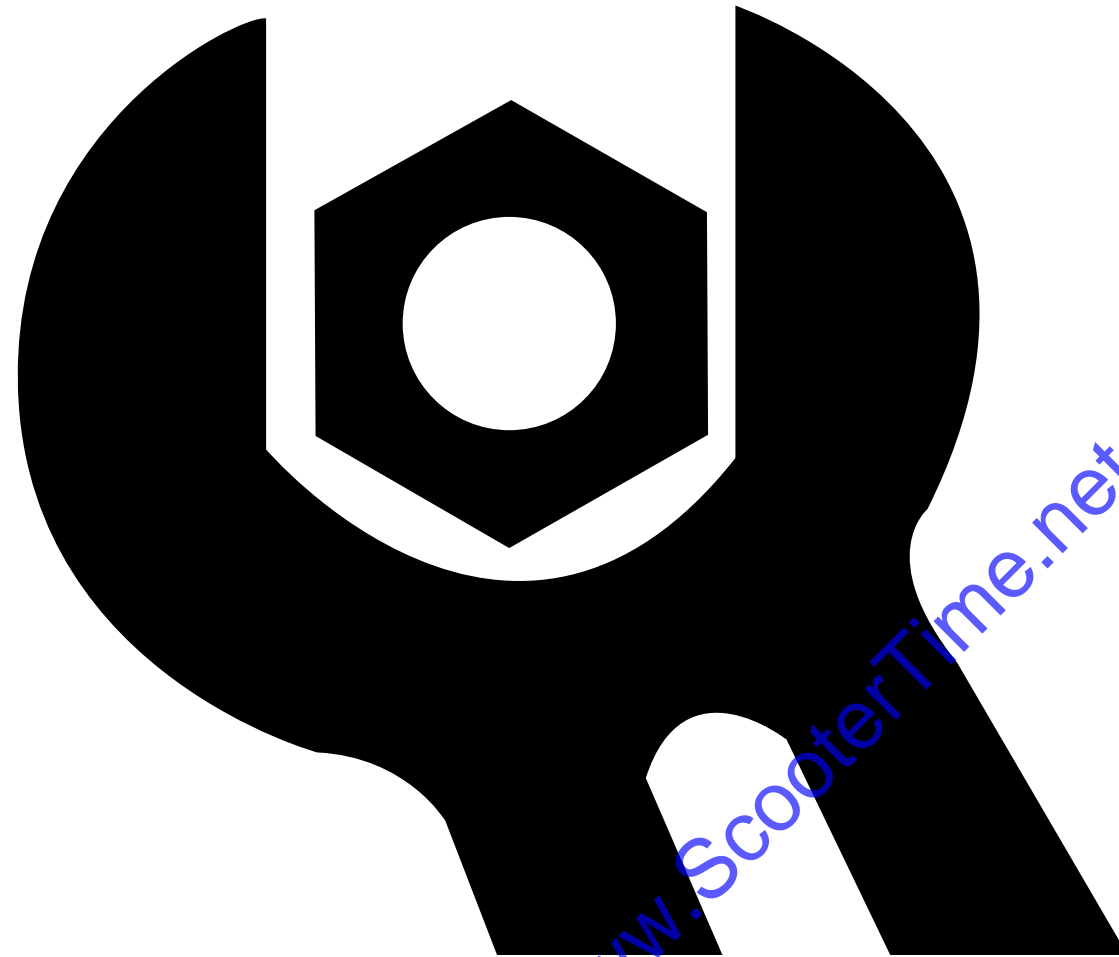
- ⑪ CDI unit
- ⑫ Vacuum hose
- ⑬ Rectifier/regulator
- ⑭ Fuel hose
- ⑮ Auto choke lead
- ⑯ Oil delivery hose
- ⑰ Throttle cable
- ⑱ Tail/brake light





- A Fasten the wire harness at the white tape marker with a plastic locking tie.
- B Pass the spark plug lead through the bottom cowling guide.
- C Pass the starter motor lead under the engine bracket and engine mount spacer, and then through the hole of the cover.
- D Fasten the wire harness with a plastic locking tie in front of the storage box bracket.
- E Fasten the auto choke lead with a plastic clip.
- F After connecting the AC magneto coupler and starter motor coupler, cover the couplers with the coupler cover.
- G Pass the rear brake cable through the bottom cowling guide.
- H To rear turn signal.





CHK

ADJ

3

CHAPTER 3

PERIODIC CHECKS AND ADJUSTMENTS

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EAS00036

PERIODIC CHECKS AND ADJUSTMENTS

INTRODUCTION

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

EAS00037

PERIODIC MAINTENANCE AND LUBRICATION INTERVALS

No.	ITEM	ROUTINE	BREAK-IN 500 km (300 mi)	EVERY	
				3,000 km (2,000 mi) or 6 months	6,000 km (4,000 mi) or 12 months
1	Spark plug	<ul style="list-style-type: none"> • Check condition. • Clean or replace if necessary. 	√	√	√
2	Air filter element	<ul style="list-style-type: none"> • Clean. • Replace if necessary. 		√	√
3 *	Carburetor	<ul style="list-style-type: none"> • Check idle speed. • Adjust if necessary. 	√		√
4 *	Fuel line	<ul style="list-style-type: none"> • Check fuel hose and vacuum hose for cracks or damage. • Replace if necessary. 		√	√
5 *	Final gear oil	<ul style="list-style-type: none"> • Check oil leakage. • Correct if necessary. • Replace every 12,000 km (8,000 mi) or 24 months. (Ride scooter a few minutes before draining.) 	REPLACE.	√	√
6 *	Autolube pump	<ul style="list-style-type: none"> • Check operation. • Correct if necessary • Bleed. 	√		√
7	Brakes	<ul style="list-style-type: none"> • Check operation. • Adjust if necessary. 		√	√
8 *	Wheels	<ul style="list-style-type: none"> • Check damage/runout. • Replace if necessary. 		√	√
9 *	Wheel bearings	<ul style="list-style-type: none"> • Check bearing assembly for looseness/damage. • Replace if damaged. 		√	√
10 *	Steering bearing	<ul style="list-style-type: none"> • Check bearing assembly for looseness. • Correct if necessary. • Moderately repack every 12,000 km (8,000 mi) or 24 months.** 	√	√	√
11 *	Rear shock absorber	<ul style="list-style-type: none"> • Check operation/oil leakage. • Replace if necessary. 		√	√
12 *	V-belt	<ul style="list-style-type: none"> • Check damage and wear. • Replace if necessary. • Replace every 10,000 km (6,000 mi). 			√
13 *	Chassis fasteners	<ul style="list-style-type: none"> • Check all chassis fittings and fasteners. • Correct if necessary. 	√	√	√
14 *	Control and meter cable	<ul style="list-style-type: none"> • Apply chain lube thoroughly. 	√	√	√
15 *	Centerstand	<ul style="list-style-type: none"> • Check operation. • Repair if necessary. 	√	√	√

* Since these items require special tools, data and technical skills, have a Yamaha dealer perform the service.

** Lithium soap base grease

PERIODIC MAINTENANCE AND LUBRICATION



EAU00479

NOTE: _____

The air filter needs more frequent service if you are riding in unusually wet or dusty areas.

EAU03903

NOTE: _____

From 9,000 km (6,000 mi) or 18 months, repeat the maintenance intervals starting from 3,000 km (2,000 mi) or 6 months.

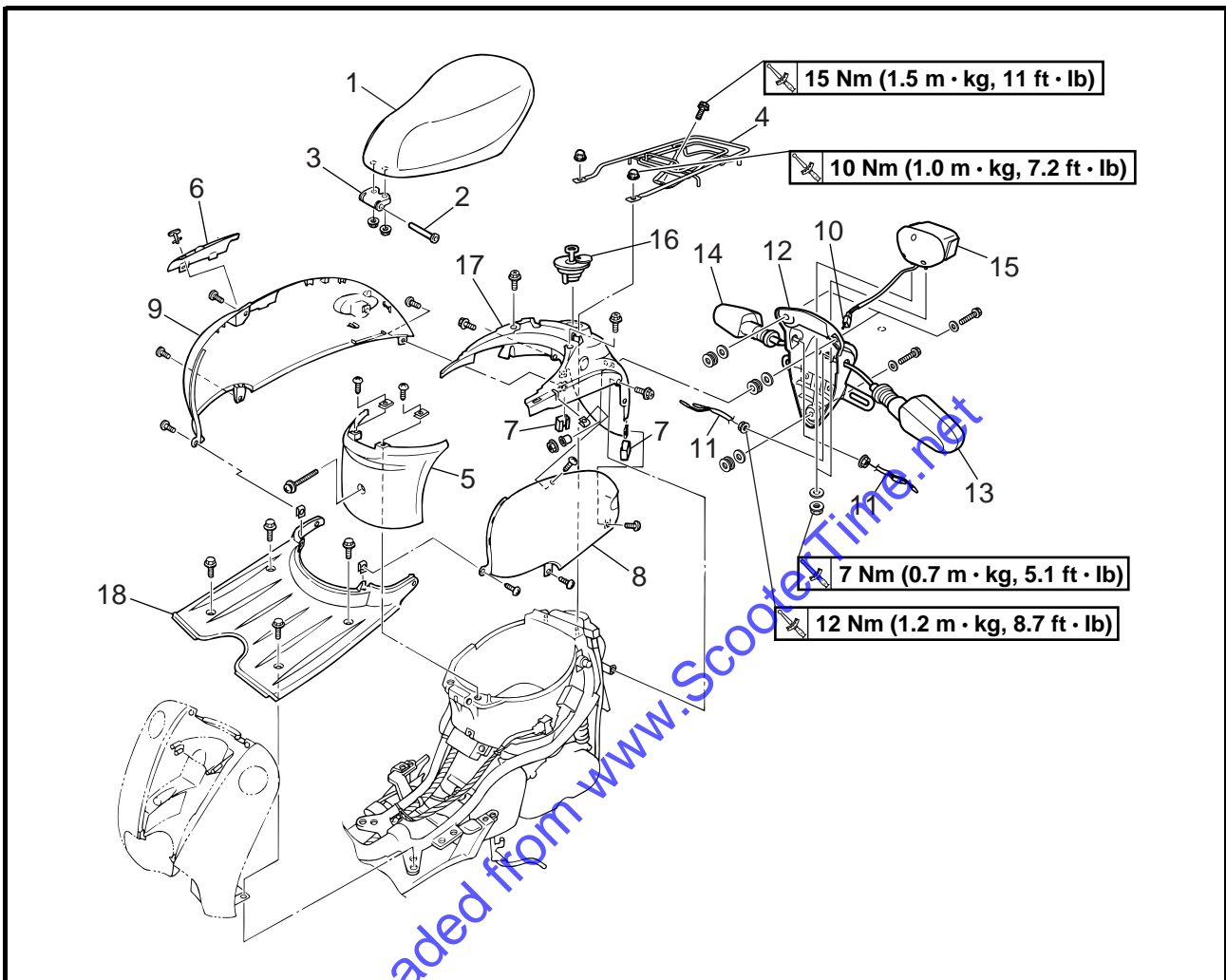
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SIDE COVERS AND FOOTREST BOARD



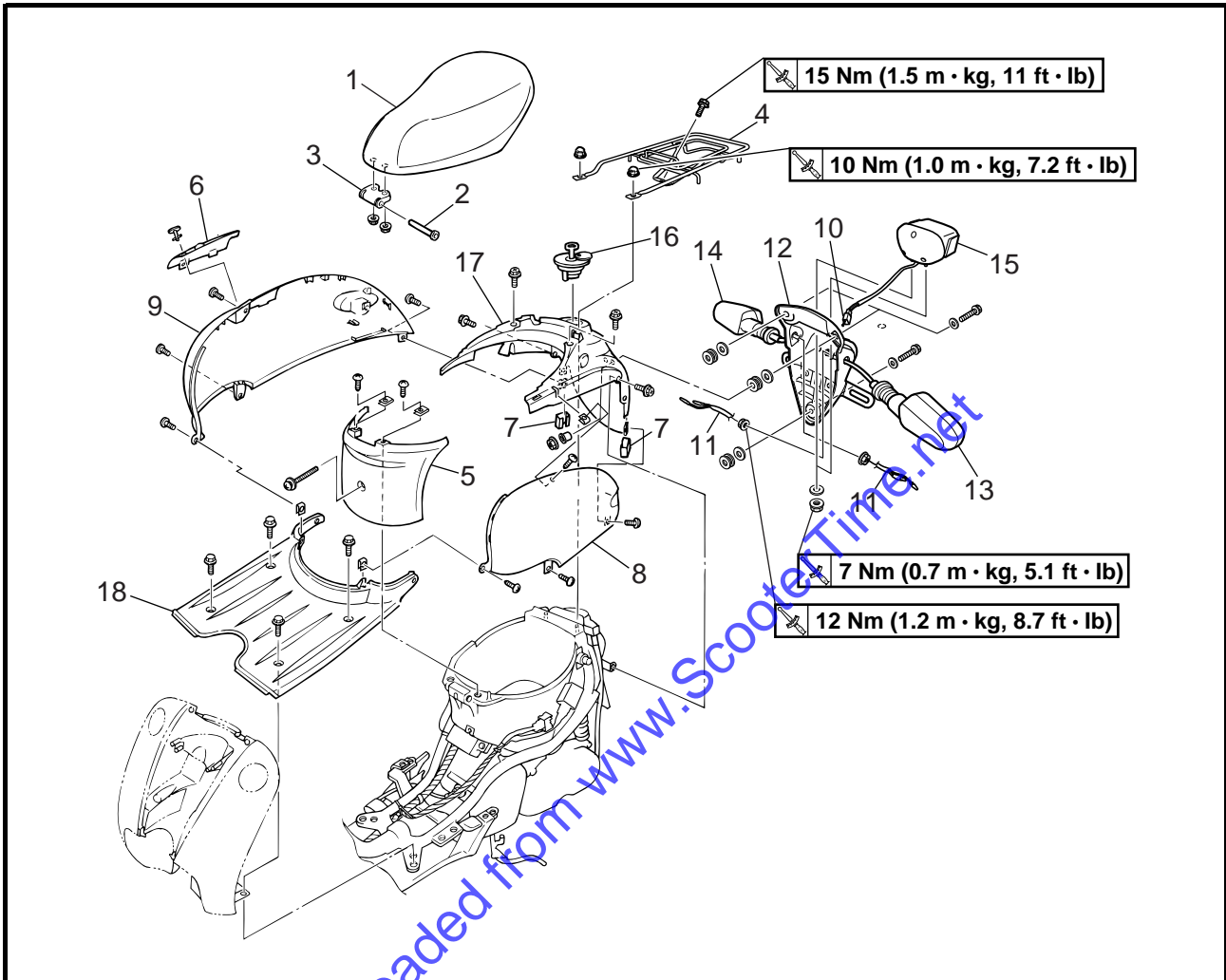
EAS00038

SIDE COVERS AND FOOTREST BOARD



Order	Job/Part	Q'ty	Remarks
	Removing the side covers and footrest board		Remove the parts in the order listed.
1	Seat	1	
2	Pin	1	
3	Seat bracket	1	
4	Carrier	1	
5	Center cover	1	
6	Oil tank cover	1	
7	Cowling bold cap	2	
8	Side cover (left)	1	
9	Side cover (right)	1	
10	Tail/brake light coupler	1	Disconnect.
11	Rear turn signal lead	4	Disconnect.

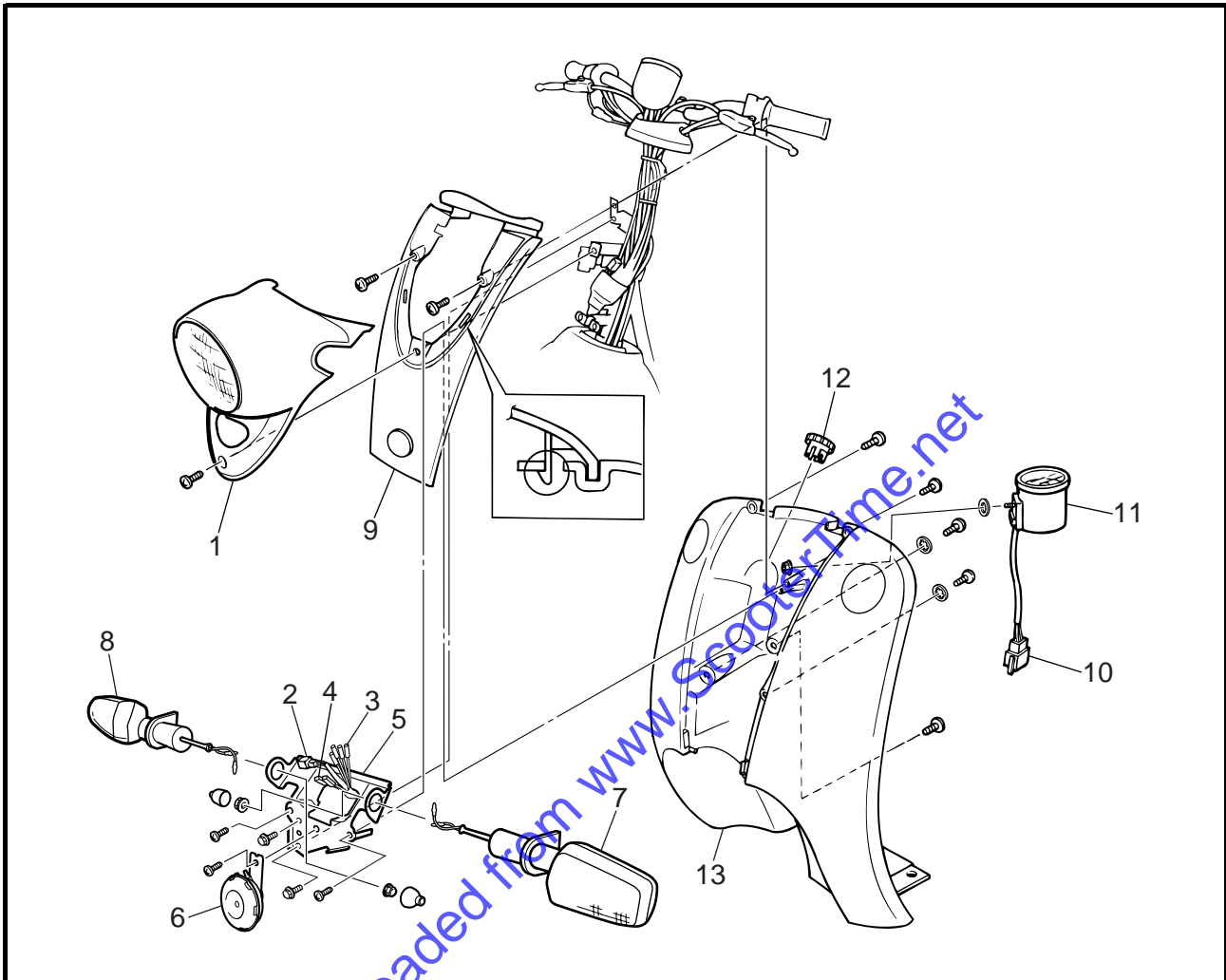
SIDE COVERS AND FOOTREST BOARD



Order	Job/Part	Q'ty	Remarks
12	Rear turn signal bracket	1	For installation, reverse the removal procedure.
13	Rear turn signal (left)	1	
14	Rear turn signal (right)	1	
15	Tail/brake light	1	
16	Fuel tank cap	1	
17	Tail cover	1	
18	Footrest board	1	

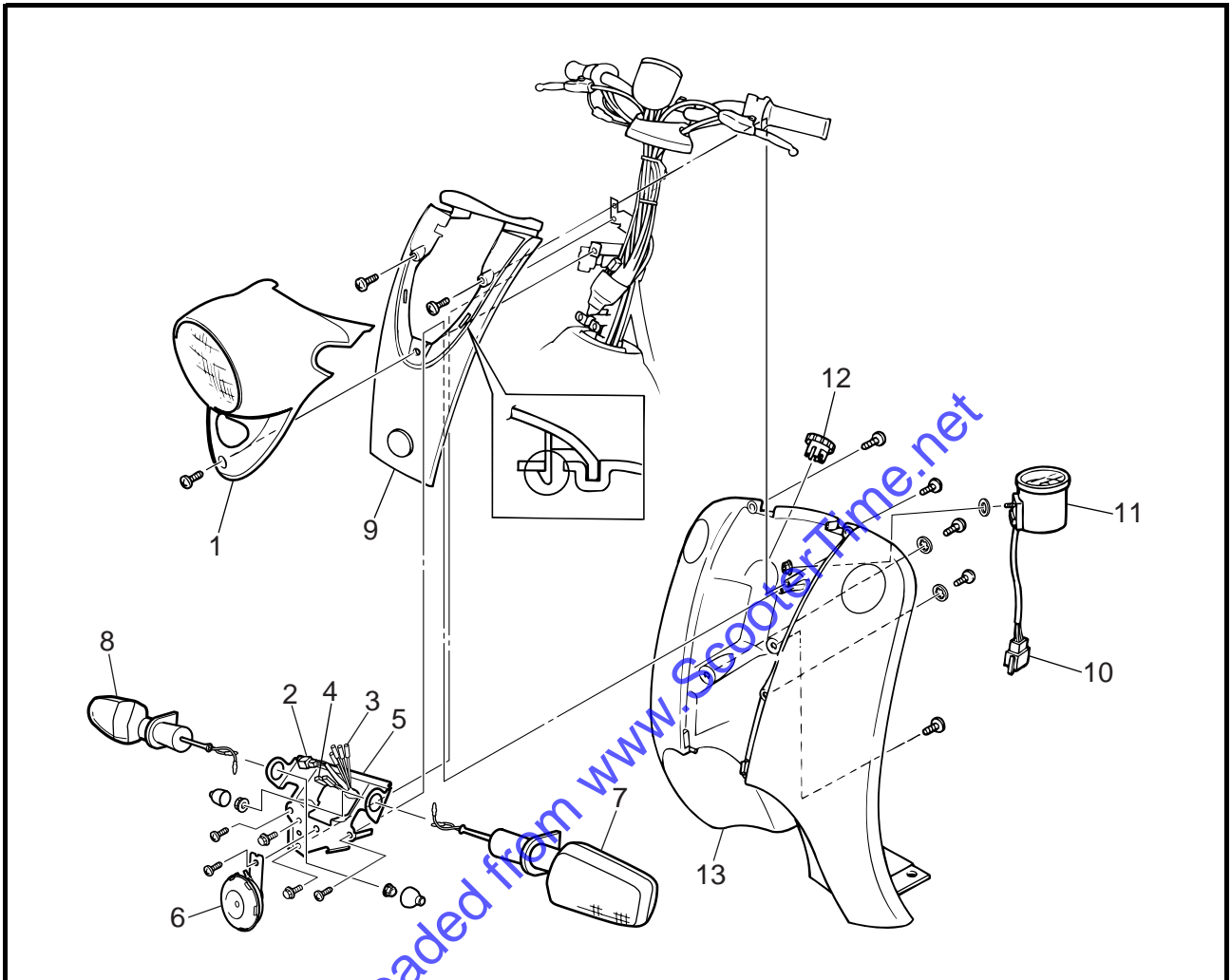
EAS00040

FRONT PANEL AND LEG SHIELD



Order	Job/Part	Q'ty	Remarks
	Removing the front panel and leg shield		Remove the parts in the order listed.
	Footrest board		Refer to "SIDE COVERS AND FOOT-REST BOARD".
1	Headlight cover	1	
2	Headlight coupler	1	Disconnect.
3	Front turn signal lead	4	Disconnect.
4	Horn lead	2	Disconnect.
5	Front turn signal bracket	1	
6	Horn	1	
7	Front turn signal (left)	1	
8	Front turn signal (right)	1	
9	Front panel	1	
10	Fuel level gauge coupler	1	Disconnect.

FRONT PANEL AND LEG SHIELD



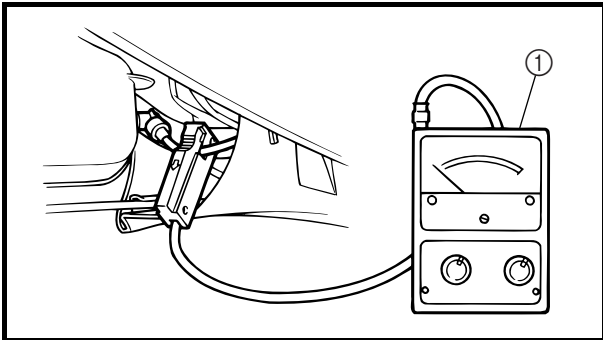
Order	Job/Part	Q'ty	Remarks
11	Fuel level gauge	1	For installation, reverse the removal procedure.
12	Main switch cover	1	
13	Leg shield	1	

EAS00053


ADJUSTING THE ENGINE IDLING SPEED

NOTE:

Prior to adjusting the engine idling speed, the carburetor should be adjusted properly, the air filter element should be clean, and the engine should have adequate compression.

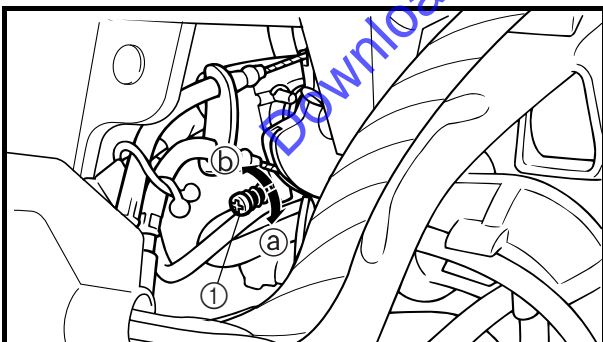


1. Start the engine and let it warm up for several minutes.
2. Remove:
 - center cover
Refer to "SIDE COVERS AND FOOTREST BOARD".
3. Attach:
 - inductive tachometer ①
(onto the spark plug lead of cylinder)

	Inductive tachometer YU-8036-A
---	---

4. Measure:
 - engine idling speed
Out of specification → Adjust.

	Engine idling speed 1,800 r/min
---	--



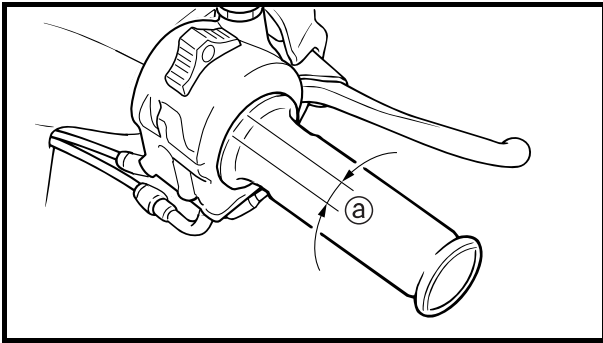
5. Adjust:
 - engine idling speed

- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- a. Turn the throttle stop screw ① in direction ① or ② until the specified engine idling speed is obtained.

Direction ①	Engine idling speed is increased.
Direction ②	Engine idling speed is decreased.

▲▲▲ ▲▲▲▲ ▲▲▲▲ ▲▲▲▲ ▲▲▲▲ ▲▲▲▲

ADJUSTING THE ENGINE IDLING SPEED/ ADJUSTING THE THROTTLE CABLE FREE PLAY



6. Adjust:
- throttle cable free play [Ⓐ]
Refer to “ADJUSTING THE THROTTLE CABLE FREE PLAY”.

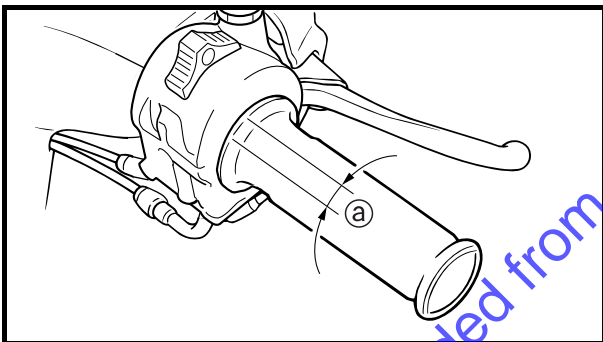
**Throttle cable free play
(at the flange of the throttle grip)**
1.5 ~ 3.5 mm (0.06 ~ 0.14 in)

EAS00058

ADJUSTING THE THROTTLE CABLE FREE PLAY

NOTE: _____

Prior to adjusting the throttle cable free play, the engine idling speed should be adjusted.



1. Check:
- throttle cable free play [Ⓐ]
Out of specification → Adjust.

**Throttle cable free play
(at the flange of the throttle grip)**
1.5 ~ 3.5 mm (0.06 ~ 0.14 in)

2. Adjust:
- throttle cable free play

- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- Loosen the locknut ^①.
 - Turn the adjusting nut ^② in direction [Ⓐ] or [Ⓑ] until the specified throttle cable free play is obtained.

Direction [Ⓐ]	Throttle cable free play is increased.
Direction [Ⓑ]	Throttle cable free play is decreased.

- c. Tighten the locknut.

⚠ WARNING _____

After adjusting the throttle cable free play, start the engine and turn the handlebar to the right and to the left to ensure that this does not cause the engine idling speed to change.



BLEEDING THE AUTOLUBE PUMP

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:

- center cover
- side cover (right)
- footrest board

Refer to "SIDE COVERS AND FOOTREST BOARD".

- air shroud

Refer to "GENERATOR" in chapter 5.

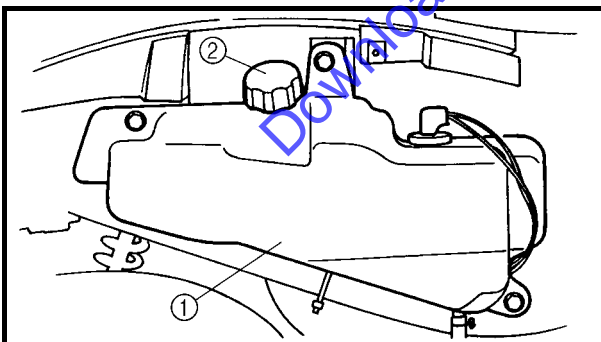
2. Check:

- oil level

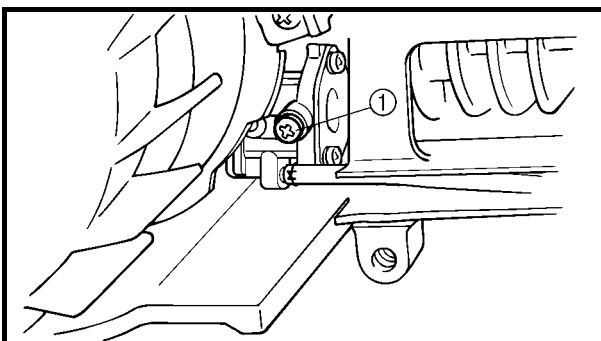
Refer to "CHECKING THE ENGINE OIL LEVEL".

3. Fill:

- oil tank ①
- oil tank filler cap ②



	Recommended oil Yamalube 2-cycle oil or 2-stroke engine oil
---	---



4. Bleed:

- pump case and/or oil hose



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

BLEEDING THE AUTOLUBE PUMP/ CHECKING THE SPARK PLUG



NOTE:

- Check the bleed screw gasket, and if damaged, replace with a new one.
- Place a oil pan under the autolube pump to catch oil.



5. Install:

- air shroud
Refer to “GENERATOR AND AUTOLUBE PUMP” in chapter 5.
- footrest board
- side cover (right)
- center cover
Refer to “SIDE COVERS AND FOOTREST BOARD”

EAS00060

CHECKING THE SPARK PLUG

1. Disconnect:
 - spark plug cap
2. Remove:
 - spark plug

CAUTION:

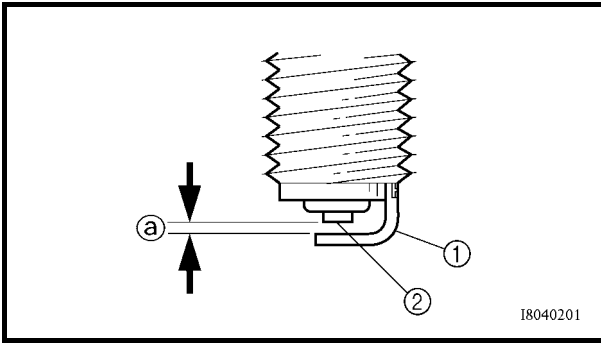
Before removing the spark plug, blow away any dirt accumulated in the spark plug well with compressed air to prevent it from falling into the cylinder.

3. Check:

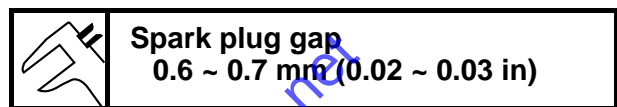
- spark plug type
Incorrect → Change.


**Spark plug type (manufacturer)
BPR7HS (NGK)**

CHECKING THE SPARK PLUG/ MEASURING THE COMPRESSION PRESSURE



4. Check:
 - electrodes ①
Damage/wear → Replace the spark plug.
 - insulator ②
Abnormal color → Replace the spark plug.
Normal color is medium-to-light tan.
5. Clean:
 - spark plug
(with a spark plug cleaner or wire brush)
6. Measure:
 - spark plug gap ③
(with a wire gauge)
Out of specification → Regap.



7. Install:
 - spark plug  20 Nm (2.0 m · kg, 14 ft · lb)

NOTE: _____

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

8. Connect:
 - spark plug cap

EAS00067

MEASURING THE COMPRESSION PRESSURE

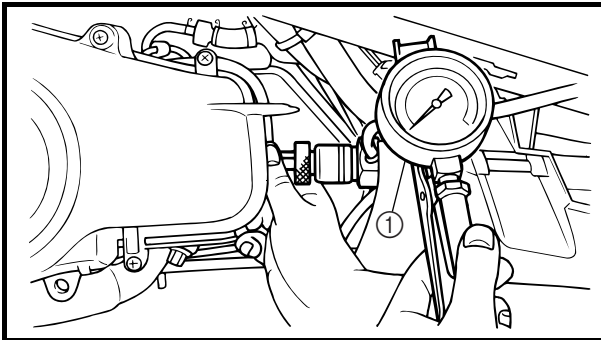
NOTE: _____

Insufficient compression pressure will result in a loss of performance.

1. Start the engine, warm it up for several minutes, and then turn it off.
2. Remove:
 - center cover
 - footrest board
Refer to "SIDE COVERS AND FOOTREST BOARD".
3. Disconnect:
 - spark plug cap
4. Remove:
 - spark plug


CAUTION:

Before removing the spark plug, use compressed air to blow away any dirt accumulated in the spark plug well to prevent it from falling into the cylinder.




5. Install:

- compression gauge ①

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

6. Measure:

- compression pressure
- Out of specification → Refer to steps (c) and (d).

	Compression pressure (at sea level) Minimum 600 kPa (6.0 kg/cm, 85.3 psi) Standard 800 kPa (8.0 kg/cm, 113.8 psi) Maximum 1,000 kPa (10.0 kg/cm, 142.2 psi)
---	--

- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- Set the main switch to "ON".
 - With the throttle wide open, crank the engine until the reading on the compression gauge stabilizes.

⚠ WARNING

To prevent sparking, ground the spark plug lead before cranking the engine.


- If the compression pressure is above the maximum specification, check the cylinder head and piston crown for carbon deposits. Carbon deposits → Eliminate.

- d. If the compression pressure is below the minimum specification, squirt a few drops of oil into the cylinder and measure again. Refer to the following table.

Compression pressure (with oil applied into the cylinder)	
Reading	Diagnosis
Higher than without oil	Piston wear or damage → Repair.
Same as without oil	Piston ring(s), cylinder head gasket or piston possibly defective → Repair.

7. Install:

- spark plug

 **20 Nm (2.0 m · kg, 14 ft · lb)**

8. Connect:

- spark plug cap

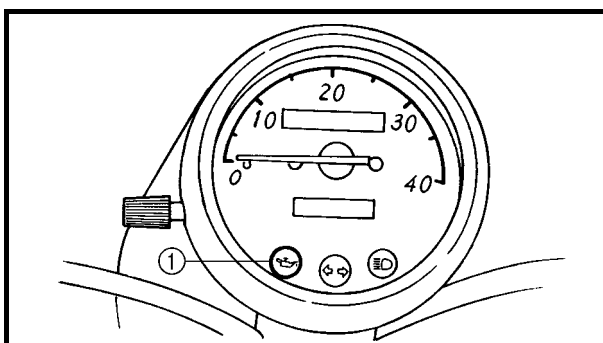
EAS00072

CHECKING THE ENGINE OIL LEVEL

1. Stand the scooter on a level surface.

NOTE: _____

- Place the scooter on a suitable stand.
- Make sure the scooter is upright.

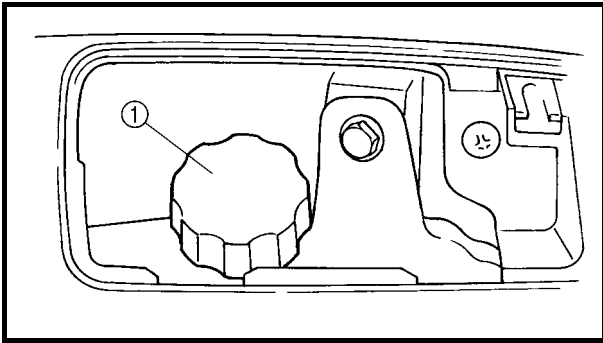


2. Check:

- oil level warning light ①

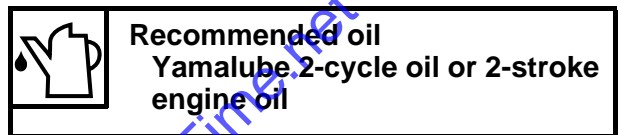
Refer to "SIGNAL SYSTEM" in chapter 7.

CHECKING THE ENGINE OIL LEVEL/ REPLACING THE TRANSMISSION OIL



3. Remove:
 - oil tank cover
Refer to "SIDE COVERS AND FOOTREST-BOARD".
 - oil tank cap ①

4. Fill:
 - engine oil
Make sure the engine oil is at the specified level. Fill with oil as necessary.



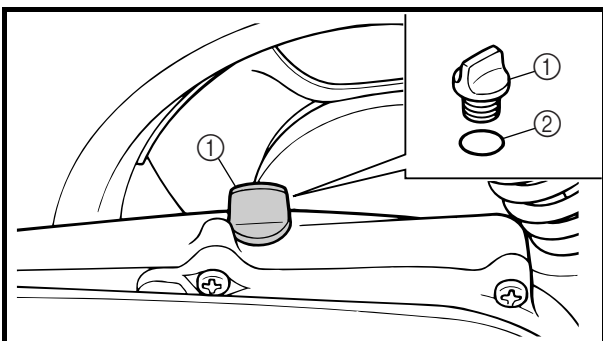
REPLACING THE TRANSMISSION OIL

1. Stand the scooter on a level surface.

NOTE:

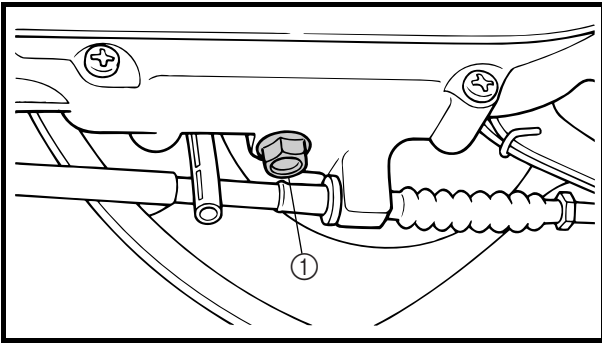
- Place the scooter on a suitable stand.
- Make sure the scooter is upright.

2. Start the engine, warm it up for several minutes, and then turn it off.
3. Place a container under the transmission oil drain bolt.



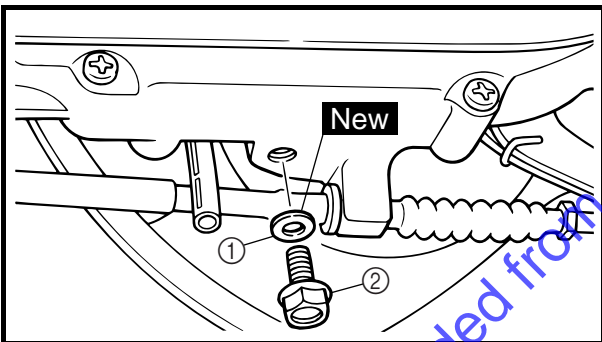
4. Remove:
 - oil filler plug ①
 - O-ring ②

REPLACING THE TRANSMISSION OIL




5. Remove:
- transmission oil drain bolt ①
 - gasket


6. Drain:
- transmission oil
(completely from the transmission case)
7. Check:
- O-ring
Damage → Replace.



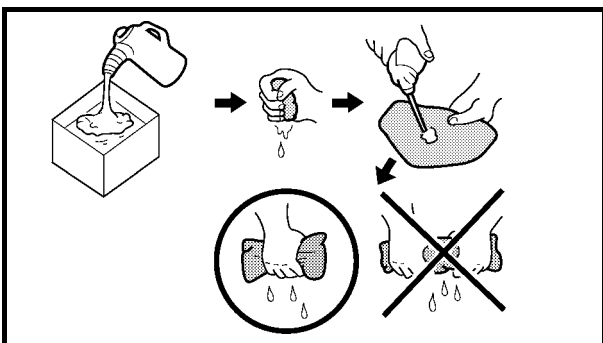
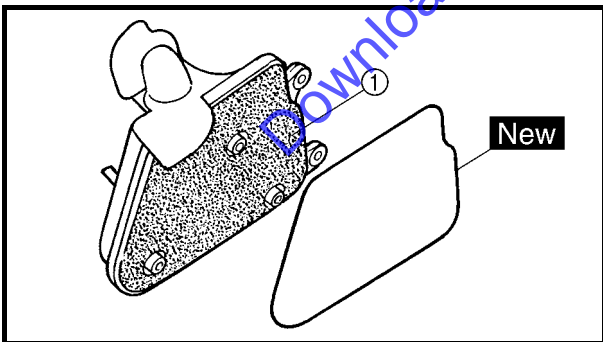
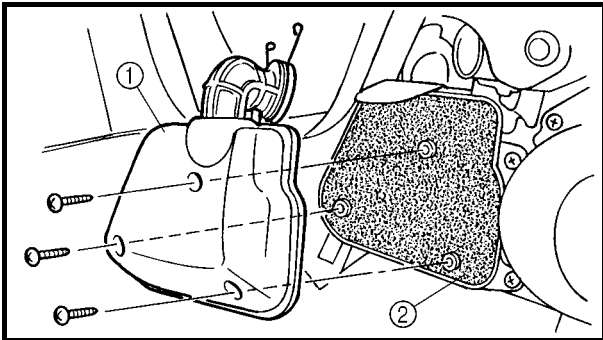
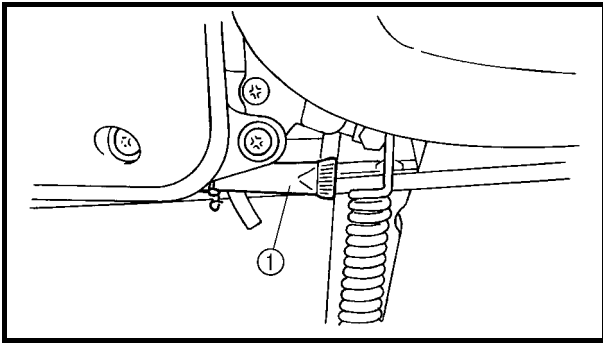
8. Install:
- gasket ① **New**
 - transmission oil drain bolt ②

 **18 Nm (1.8 m · kg, 13 ft · lb)**

9. Fill:
- crankcase
(with the specified amount of the recommended transmission oil)

	Recommended oil SAE 10W30SE Total amount 0.11 L (0.1 Imp qt, 0.12 US qt)
---	---

10. Install:
- O-ring
 - oil filler plug



EAS00089

CLEANING THE AIR FILTER ELEMENT

NOTE:

On the bottom of the air filter case is a check hose ①. If dust or water or both collects in this hose, clean the air filter element and air filter case.

1. Remove:
 - footrest board
Refer to "SIDE COVERS AND FOOTREST BOARD".
2. Remove:
 - air filter case cover ①
 - air filter element ②
3. Clean:
 - air filter element
(with solvent)

⚠ WARNING

Never use low flash point solvents, such as gasoline, to clean the air filter element. Such solvents may cause a fire or an explosion.

NOTE:

After cleaning, gently squeeze the air filter element to remove the excess solvent.

CAUTION:

Do not twist the air filter element when squeezing it.

4. Check:
 - air filter element ①
Damage → Replace.
5. Apply the recommended oil to the entire surface of the air filter element and squeeze out the excess oil. The air filter element should be wet but not dripping.



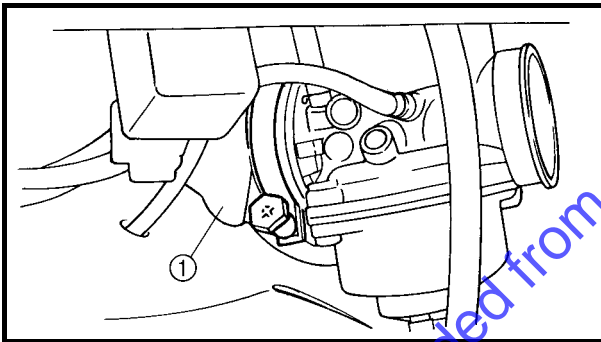
Recommended oil
Foam air filter oil or
Yamalube 2-cycle oil or 2-stroke
engine oil

6. Install:
 - air filter element
 - air filter case cover

CAUTION:

Never operate the engine without the air filter element installed. Unfiltered air will cause rapid wear of engine parts and may damage the engine. Operating the engine without the air filter element will also affect the carburetor tuning, leading to poor engine performance and possible overheating.

7. Install:
 - footrest boardRefer to "SIDE COVERS AND FOOTREST BOARD".



EAS00094

CHECKING THE CARBURETOR JOINT

1. Remove:
 - center cover
 - footrest boardRefer to "SIDE COVERS AND FOOTREST BOARD".
- air filter case
2. Check:
 - carburetor joint ①Cracks/damage → Replace.
Refer to "CARBURETOR" in chapter 6.
3. Install:
 - air filter case
 - footrest board
 - center coverRefer to "SIDE COVERS AND FOOTREST BOARD".

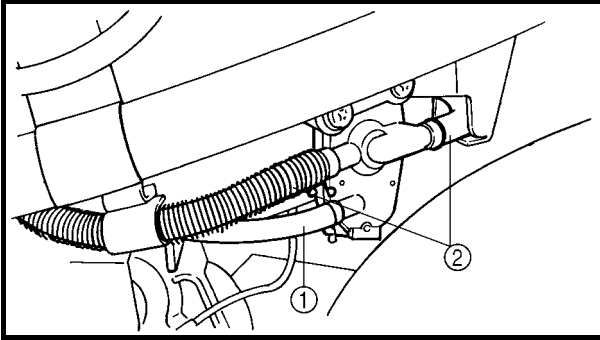
EAS00096

CHECKING THE FUEL AND VACUUM HOSES

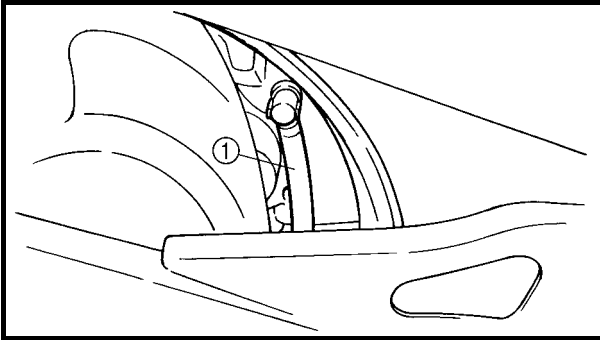
The following procedure applies to all of the fuel and vacuum hoses.

1. Remove:
 - side cover (left)Refer to "SIDE COVERS AND FOOTREST BOARD".

**CHECKING THE FUEL AND VACUUM HOSES/
CHECKING THE CRANKCASE BREATHER HOSE/
CHECKING THE EXHAUST SYSTEM**



2. Check:
 - vacuum hose ①
 - fuel hoses ②
 Cracks/damage → Replace.
 Loose connection → Connect properly.
3. Install:
 - side cover (left)
 Refer to "SIDE COVERS AND FOOTREST BOARD".



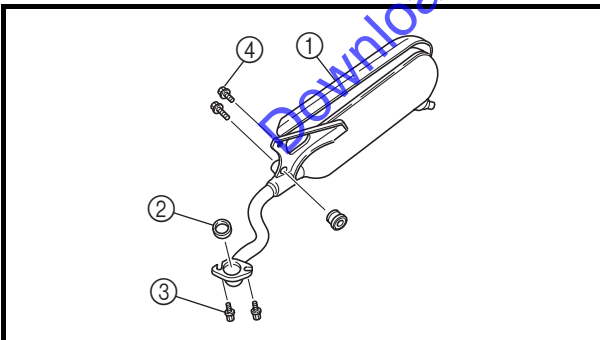
EAS00098

CHECKING THE CRANKCASE BREATHER HOSE

1. Check:
 - crankcase breather hose ①
 Cracks/damage → Replace.
 Loose connection → Connect properly.

CAUTION:

Make sure the crankcase breather hose is routed correctly.

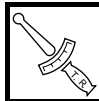


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CHECKING THE EXHAUST SYSTEM

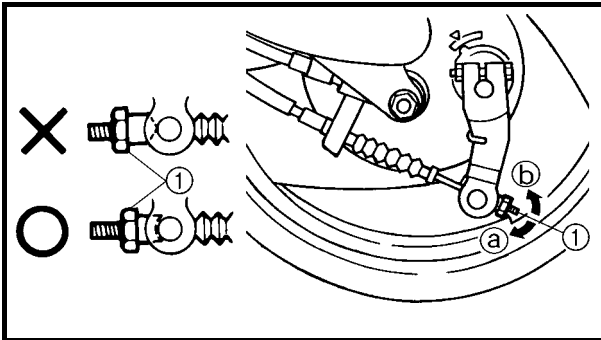
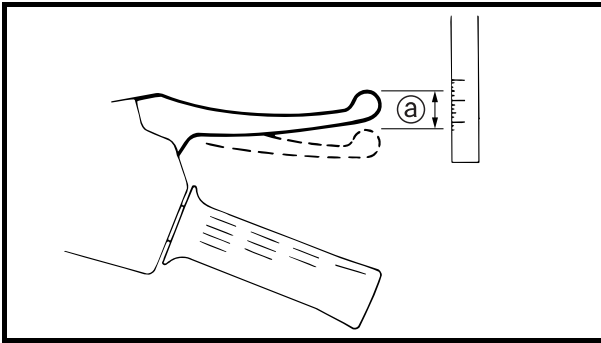
The following procedure applies to all of the exhaust pipes and gaskets.

1. Check:
 - exhaust pipe
 - muffler ①
 Cracks/damage → Replace.
 - gasket ②
 Exhaust gas leaks → Replace.
2. Check:
 - tightening torque



Exhaust pipe bolt ③
13 Nm (1.3 m · kg, 9.4 ft · lb)
Muffler and muffler bracket bolt ④
28 Nm (2.8 m · kg, 20 ft · lb)

ADJUSTING THE FRONT BRAKE/ ADJUSTING THE REAR BRAKE



EAS00109

CHASSIS

ADJUSTING THE FRONT BRAKE

1. Check:
 - brake lever free play Ⓐ
 Out of specification → Adjust.

	Brake lever free play (at the end of the brake lever) 10 ~ 20 mm (0.39 ~ 0.79 in)
--	--

2. Adjust:
 - brake lever free play

- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- a. Turn the adjusting nut ① in direction Ⓐ or Ⓑ until the specified brake lever free play is obtained.

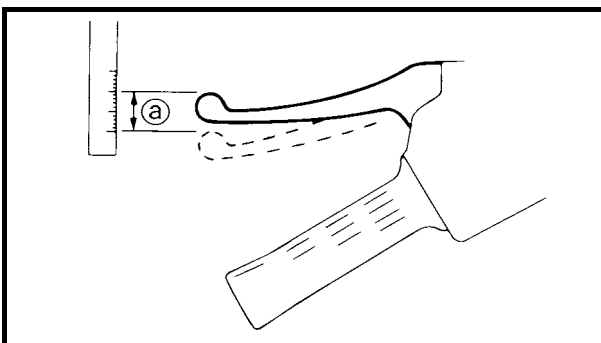
Direction Ⓐ	Brake lever free play is increased.
Direction Ⓑ	Brake lever free play is decreased.

CAUTION:

After adjusting the brake lever free play, make sure there is no brake drag.



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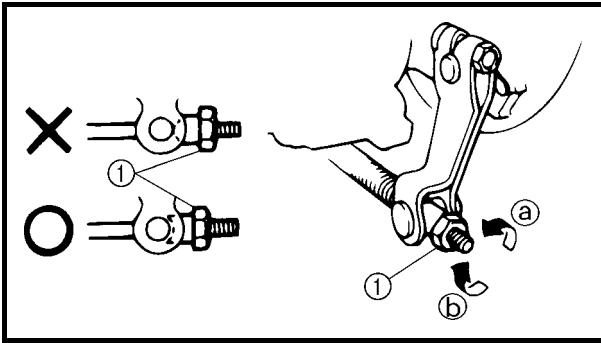


EAS00114

ADJUSTING THE REAR BRAKE

1. Check:
 - brake lever free play Ⓐ
 Out of specification → Adjust.

	Brake lever free play 10 ~ 20 mm (0.39 ~ 0.79 in)
--	--



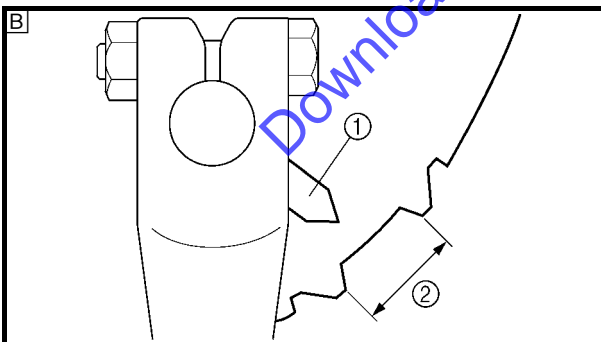
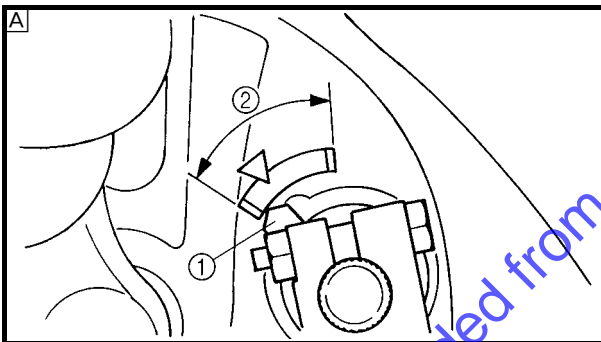
2. Adjust:
- brake lever free play

- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- a. Turn the adjusting nut ① in direction ③ or ④ until the specified brake lever free play is obtained.

Direction ③	Brake lever free play is increased.
Direction ④	Brake lever free play is decreased.

CAUTION:

After adjusting the brake lever free play, make sure there is no brake drag.



EAS00127

CHECKING THE BRAKE SHOES

1. Operate the brake.
2. Check:
 - wear indicator ①
 - Reaches the wear limit line ② → Replace the brake shoes as a set.
 - Refer to “FRONT WHEEL AND BRAKE” and “REAR WHEEL AND BRAKE” in chapter 4.

- Ⓐ Front brake
Ⓑ Rear brake

EAS00148

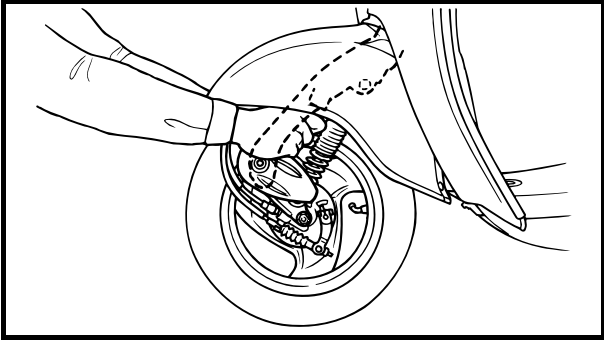
CHECKING AND ADJUSTING THE STEERING HEAD

1. Stand the scooter on a level surface.

⚠ WARNING

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

CHECKING AND ADJUSTING THE STEERING HEAD



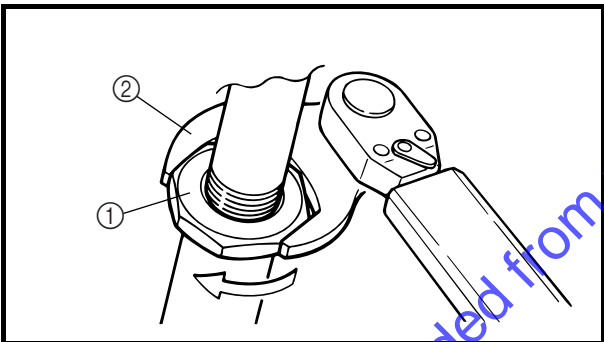
NOTE:
Place the scooter on a suitable stand so that the front wheel is elevated.

2. Check:
 - steering head
Grasp the bottom of the front fork legs and gently rock the front fork.
Binding/looseness → Adjust the steering head.

3. Remove:
 - center cover
 - footrest board
Refer to "SIDE COVERS AND FOOTREST BOARD".
 - leg shield
Refer to "FRONT PANEL AND LEG SHIELD".

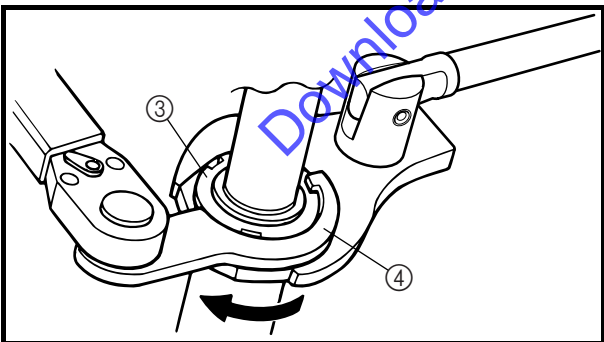
4. Adjust:
 - steering head

- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- a. Remove the upper steering stem ring nut.
 - b. Loosen the upper race ① and then tighten it to specification with the steering nut wrench (45 mm) ②.



	Steering nut wrench (45 mm) YU-01444
--	--

NOTE:
Set the torque wrench at a right angle to the steering stem ring nut wrench.



	Upper race 7 Nm (0.7 m · kg, 5.1 ft · lb)
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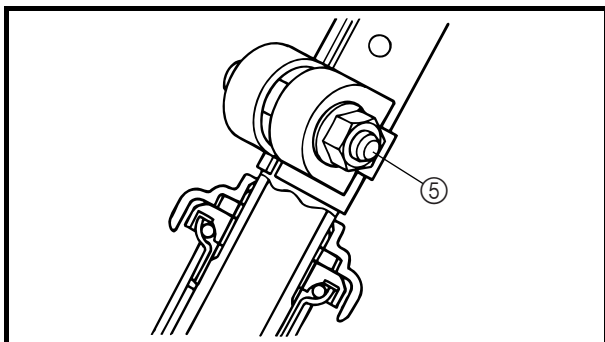
- c. Hold the upper race with a steering nut wrench (45 mm) and tighten the upper steering stem ring nut ③ with a steering nut wrench ④.

	Steering nut wrench YU-33975
--	--


	Upper steering stem ring nut 33 Nm (3.3 m · kg, 24 ft · lb)
--	---

- d. Check the steering head for looseness or binding by turning the front fork all the way in both directions.





5. Install:
 - Steering shaft bolt (5)

 42 Nm (4.2 m · kg, 30 ft · lb)

6. Install:
 - leg shield
Refer to “FRONT PANEL AND LEG SHIELD”.
 - footrest board
 - center cover
Refer to “SIDE COVERS AND FOOTREST BOARD”.

EAS00151

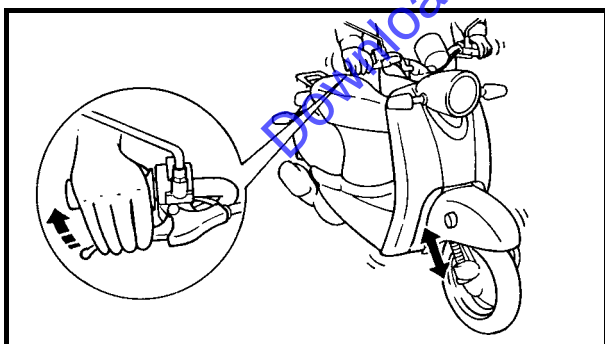
CHECKING THE FRONT SHOCK ABSORBER ASSEMBLIES

1. Stand the scooter on a level surface.

WARNING

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

2. Hold the scooter upright and apply the front brake.



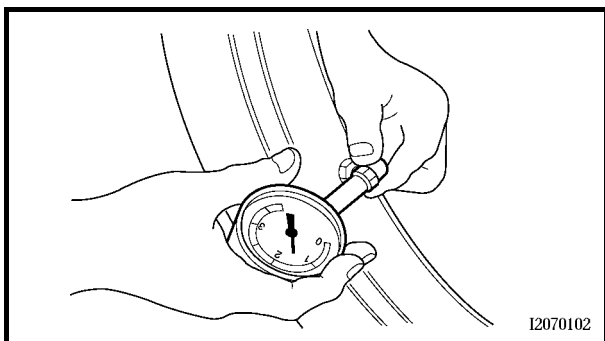
3. Check:
 - front shock absorber operation
Push down hard on the handlebar several times and check if the front fork rebounds smoothly.
Rough movement → Repair.
Refer to “FRONT SHOCK ABSORBER ASSEMBLIES” in chapter 4.

EAS00163

CHECKING THE TIRES

The following procedure applies to both of the tires.

1. Measure:
 - tire pressure
Out of specification → Regulate.



I2070102

⚠ WARNING

- The tire pressure should only be checked and regulated when the tire temperature equals the ambient air temperature.
- The tire pressure and the suspension must be adjusted according to the total weight (including cargo, rider and accessories) and the anticipated riding speed.
- Operation of an overloaded scooter could cause tire damage, an accident or an injury.

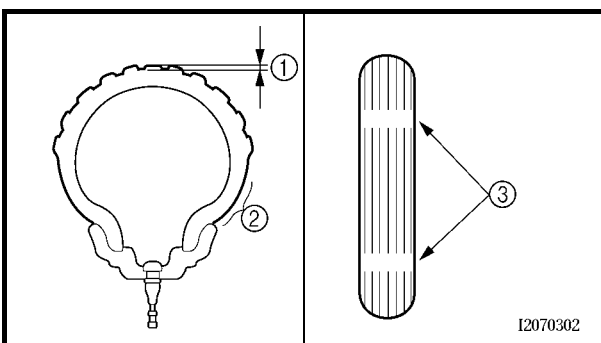
NEVER OVERLOAD THE SCOOTER.

Basic weight (with oil and a full fuel tank)	74 kg (163 lb)	
Maximum load*	76 kg (168 lb)	
Cold tire pressure	Front	Rear
	150 kPa (1.50 kgf/cm ² , 21.8 psi)	175 kPa (1.75 kgf/cm ² , 25.4 psi)

* total of cargo, rider and accessories

⚠ WARNING


It is dangerous to ride with a worn-out tire. When the tire tread reaches the wear limit, replace the tire immediately.



12070302

2. Check:

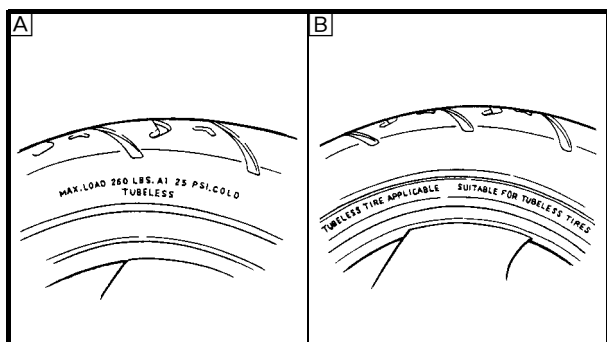
- tire surfaces
Damage/wear → Replace the tire.

	Minimum tire tread depth 1.0 mm (0.04 in)
---	--

- ① Tire tread depth
- ② Side wall
- ③ Wear indicator

⚠ WARNING

- Do not use a tubeless tire on a wheel designed only for tube tires to avoid tire failure and personal injury from sudden deflation.
- When using tube tires, be sure to install the correct tube.
- Always replace a new tube tire and a new tube as a set.
- To avoid pinching the tube, make sure the wheel rim band and tube are centered in the wheel groove.
- Patching a punctured tube is not recommended. If it is absolutely necessary to do so, use great care and replace the tube as soon as possible with a good quality replacement.



- Ⓐ Tire
- Ⓑ Wheel

Tube wheel	Tube tire only
Tubeless wheel	Tube or tubeless tire

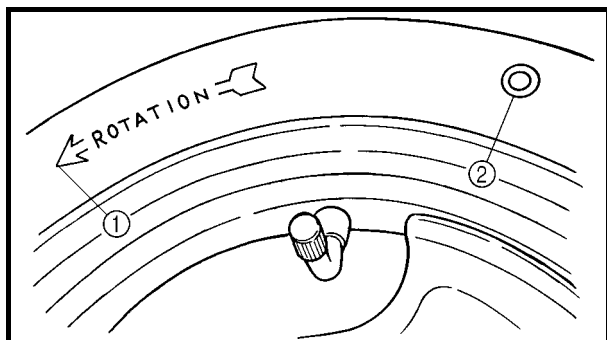
- After extensive tests, the tires listed below have been approved by Yamaha Motor Co., Ltd. for this model. The front and rear tires should always be by the same manufacturer and of the same design. No guarantee concerning handling characteristics can be given if a tire combination other than one approved by Yamaha is used on this scooter.

Front tire

Manufacturer	Model	Size
INOUE	MB38	80/90-10 (34J)
CHENG SHIN	C-922	80/90-10 (34J)

Rear tire

Manufacturer	Model	Size
INOUE	MB38	80/90-10 (34J)
CHENG SHIN	C-922	80/90-10 (34J)



⚠ WARNING

New tires have a relatively low grip on the road surface until they have been slightly worn. Therefore, approximately 100 km should be traveled at normal speed before any high-speed riding is done.

NOTE:

- For tires with a direction of rotation mark ①:
- Install the tire with the mark pointing in the direction of wheel rotation.
 - Align the mark ② with the valve installation point.

EAS00168

CHECKING THE WHEELS

The following procedure applies to both of the wheels.

1. Check:
 - wheel
Damage/out-of-round → Replace.

⚠ WARNING

Never attempt to make any repairs to the wheel.

NOTE:

After a tire or wheel has been changed or replaced, always balance the wheel.

EAS00170

CHECKING AND LUBRICATING THE CABLES

The following procedure applies to all of the cable sheaths and cables.

WARNING

Damaged cable sheaths may cause the cable to corrode and interfere with its movement. Replace damaged cable sheaths and cables as soon as possible.

1. Check:
 - cable sheath
Damage → Replace.
2. Check:
 - cable operation
Rough movement → Lubricate.



NOTE:

Hold the cable end upright and pour a few drops of lubricant into the cable sheath or use a suitable lubricating device.

EAS00171

LUBRICATING THE LEVERS

Lubricate the pivoting point and metal-to-metal moving parts of the levers.



EAS00173

LUBRICATING THE CENTERSTAND

Lubricate the pivoting point and metal-to-metal moving parts of the centerstand.





EAS00179

ELECTRICAL SYSTEM CHECKING AND CHARGING THE BATTERY

⚠ WARNING

Batteries generate explosive hydrogen gas and contain electrolyte which is made of poisonous and highly caustic sulfuric acid. Therefore, always follow these preventive measures:

- Wear protective eye gear when handling or working near batteries.
- Charge batteries in a well-ventilated area.
- Keep batteries away from fire, sparks or open flames (e.g., welding equipment, lighted cigarettes).
- DO NOT SMOKE when charging or handling batteries.
- KEEP BATTERIES AND ELECTROLYTE OUT OF REACH OF CHILDREN.
- Avoid bodily contact with electrolyte as it can cause severe burns or permanent eye injury.

FIRST AID IN CASE OF BODILY CONTACT: EXTERNAL

- Skin — Wash with water.
- Eyes — Flush with water for 15 minutes and get immediate medical attention.

INTERNAL

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

CAUTION:

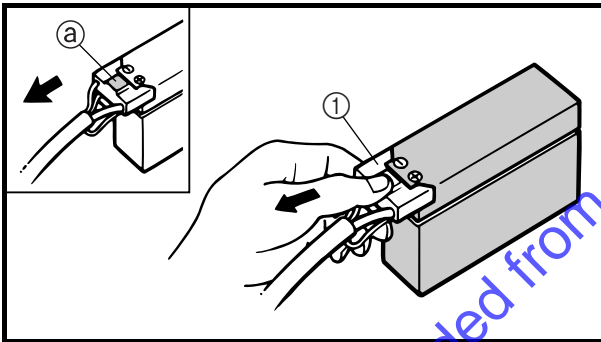
Charging time, charging amperage and charging voltage for an MF battery are different from those of conventional batteries. The MF battery should be charged as explained in the charging method illustrations. If the battery is overcharged, the electrolyte level will drop considerably. Therefore, take special care when charging the battery.

NOTE:

Since MF batteries are sealed, it is not possible to check the charge state of the battery by measuring the specific gravity of the electrolyte. Therefore, the charge of the battery has to be checked by measuring the voltage at the battery terminals.

1. Remove:

- center cover
Refer to "SIDE COVERS AND FOOTREST BOARD".
- battery box
Refer to "ENGINE REMOVAL" in chapter 5.



2. Disconnect:

- battery lead coupler ①
(from the battery terminals)

NOTE:

Push down on the tab @, and then remove the battery lead coupler.

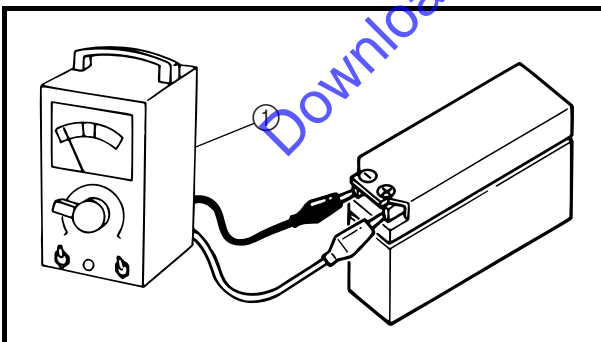
3. Remove:

- battery

4. Measure:

- battery charge

- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- a. Connect a battery tester ① to the battery terminals.



Tester positive probe →
battery positive terminal
Tester negative probe →
battery negative terminal

NOTE:

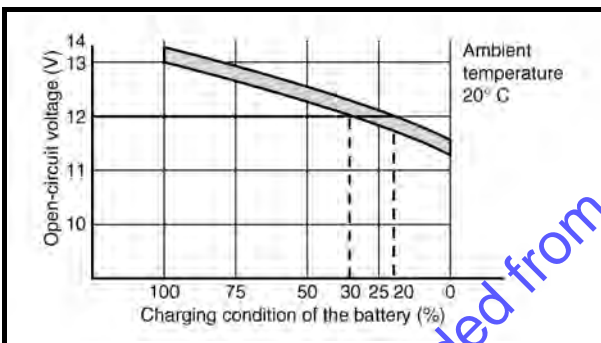
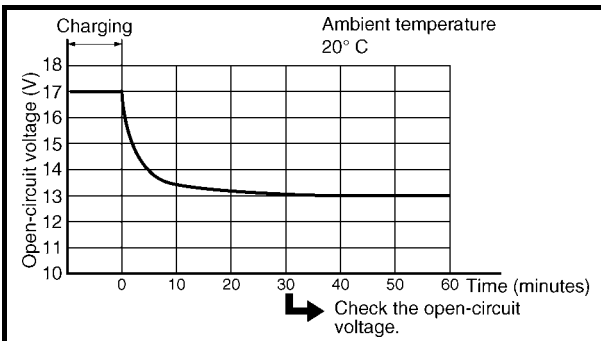
- The charge state of an MF battery can be checked by measuring its open-circuit voltage (i.e., the voltage when the positive terminal is disconnected).
- No charging is necessary when the open-circuit voltage equals or exceeds 12.8 V.

- b. Check the charge of the battery, as shown in the charts and the following example.

Example

- c. Open-circuit voltage = 12.0 V
 d. Charging time = 6.5 hours
 e. Charge of the battery = 20 ~ 30%

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5. Charge:
 • battery
 (refer to the appropriate charging method illustration)

⚠ WARNING

Do not quick charge a battery.

CAUTION

- Never remove the MF battery sealing caps.
- Do not use a high-rate battery charger since it forces a high-amperage current into the battery quickly and can cause battery overheating and battery plate damage.
- If it is impossible to regulate the charging current on the battery charger, be careful not to overcharge the battery.
- When charging a battery, be sure to remove it from the scooter. (If charging has to be done with the battery mounted on the scooter, disconnect the negative battery lead from the battery terminal.)
- To reduce the chance of sparks, do not plug in the battery charger until the battery charger leads are connected to the battery.
- Before removing the battery charger lead clips from the battery terminals, be sure to turn off the battery charger.
- Make sure the battery charger lead clips are in full contact with the battery terminal and that they are not shorted. A corroded battery charger lead clip may generate heat in the contact area and a weak clip spring may cause sparks.

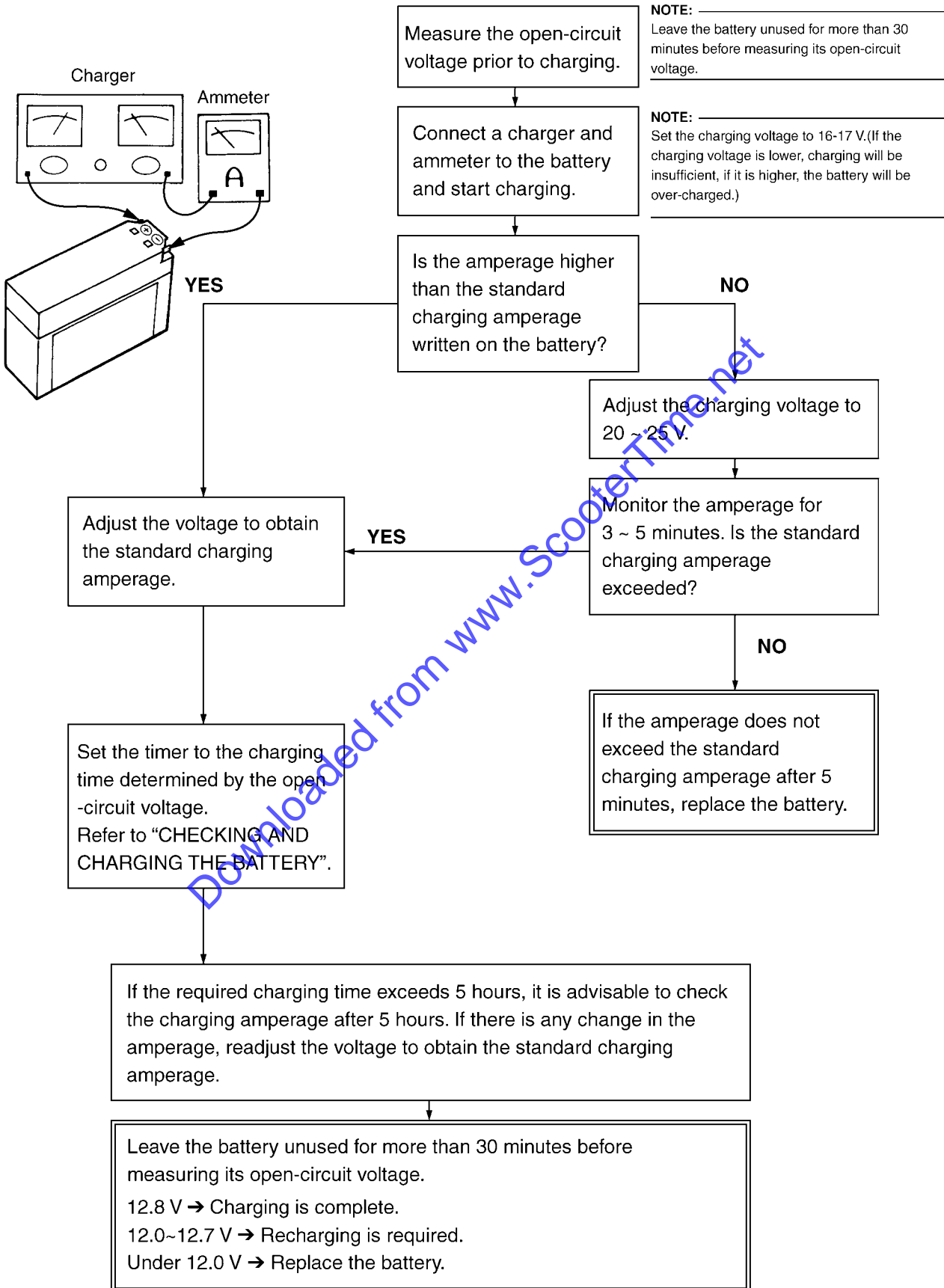
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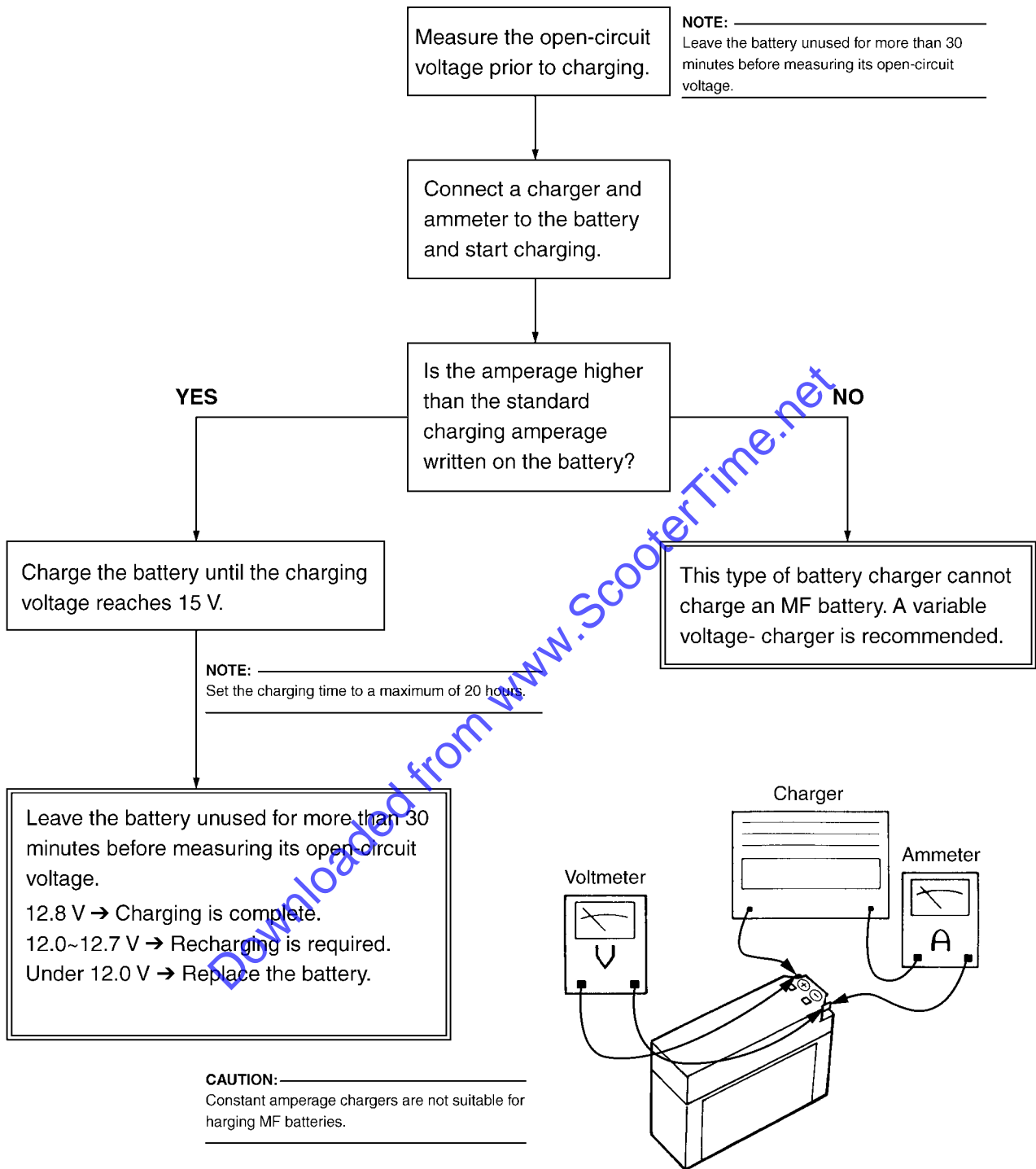
- If the battery becomes hot to the touch at any time during the charging process, disconnect the battery charger and let the battery cool before reconnecting it. Hot batteries can explode!
 - As shown in the following illustration, the open-circuit voltage of an MF battery stabilizes about 30 minutes after charging has been completed. Therefore, wait 30 minutes after charging is completed before measuring the open-circuit voltage.
-

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Charging method using a variable voltage charger



Charging method using a constant voltage charger





6. Install:
 - battery
7. Connect:
 - battery lead coupler
(to the battery terminals)
8. Check:
 - battery terminals
Dirt → Clean with a wire brush.
Loose connection → Connect properly.
9. Lubricate:
 - battery terminal

	Recommended lubricant Dielectric grease
---	--

10. Install:
 - battery box
Refer to "ENGINE REMOVAL" in chapter 5.
 - center cover
Refer to "SIDE COVERS AND FOOTREST BOARD".

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EAS00181

CHECKING THE FUSE

CAUTION:

To avoid a short circuit, always set the main switch to “OFF” when checking or replacing a fuse.

1. Remove:
 - center cover
Refer to “SIDE COVERS AND FOOTREST BOARD”.
 - battery
Refer to “ENGINE REMOVAL” in chapter 5.
2. Check:
 - continuity

- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- a. Connect the pocket tester to the fuse and check the continuity.

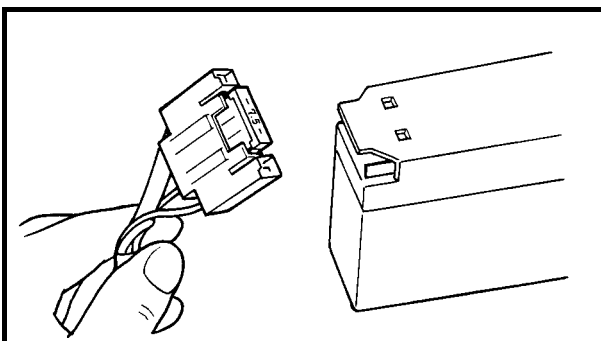
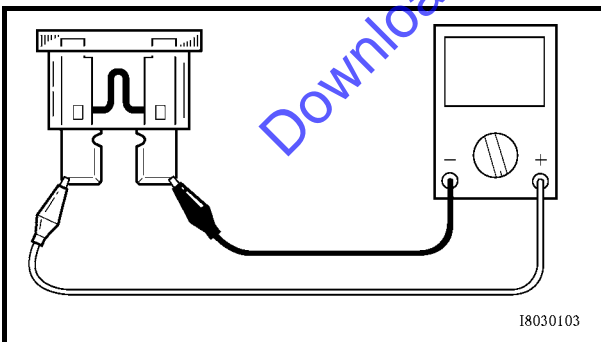
NOTE:

Set the pocket tester selector to “ $\Omega \times 1$ ”.

	Pocket tester YU-03112
---	---

- b. If the pocket tester indicates “ ∞ ”, replace the fuse.

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3. Replace:
 - blown fuse

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- a. Set the main switch to “OFF”.
- b. Install a new fuse of the correct amperage.
- c. Set on the switches to verify if the electrical circuit is operational.
- d. If the fuse immediately blows again, check the electrical circuit.

Items	Amperage rating	Q'ty
Main fuse	7.5 A	1

⚠ WARNING

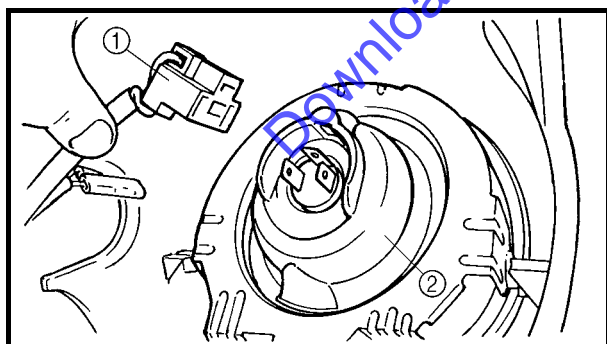
Never use a fuse with an amperage rating other than that specified. Improvising or using a fuse with the wrong amperage rating may cause extensive damage to the electrical system, cause the lighting and ignition systems to malfunction and could possibly cause a fire.

4. Install:
 - battery
Refer to “ENGINE REMOVAL” in chapter 4.
 - center cover
Refer to “SIDE COVERS AND FOOTREST BOARD”.

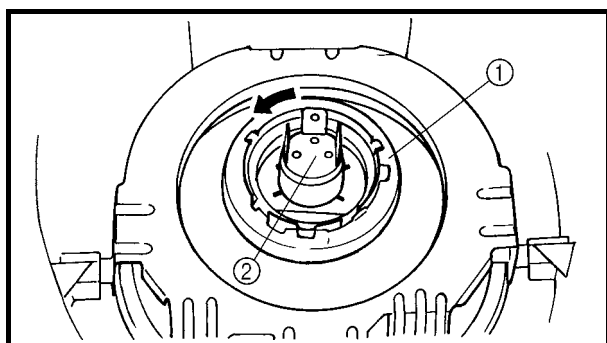
EAS00182

REPLACING THE HEADLIGHT BULB

1. Remove:
 - Headlight cover
Refer to “FRONT PANEL AND LEG SHIELD”.



2. Disconnect:
 - headlight coupler ①
3. Remove:
 - headlight bulb holder cover ②

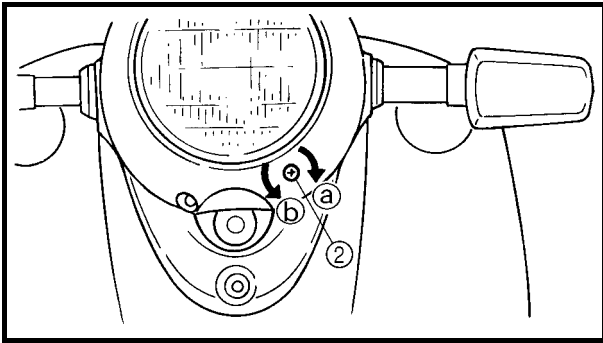


4. Detach:
 - headlight bulb holder ①
5. Remove:
 - headlight bulb ②

⚠ WARNING

Since the headlight bulb gets extremely hot, keep flammable products and your hands away from the bulb until it has cooled down.

ADJUSTING THE HEADLIGHT BEAM



2. Adjust:
- headlight beam (horizontally)

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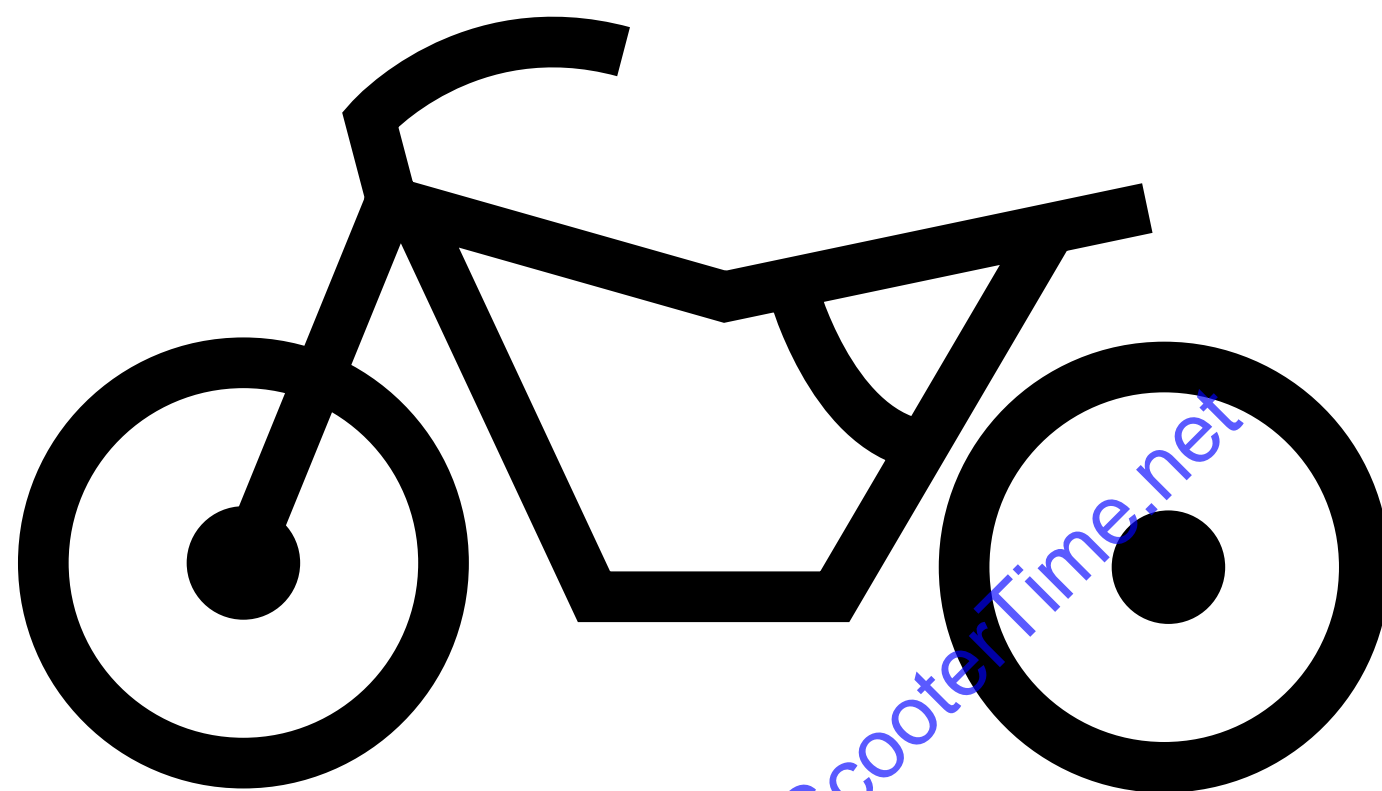
a. Turn the adjusting knob ② in direction ① or ②.

Direction ①	Headlight beam moves to the right.
Direction ②	Headlight beam moves to the left.

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CHAPTER 4 CHASSIS

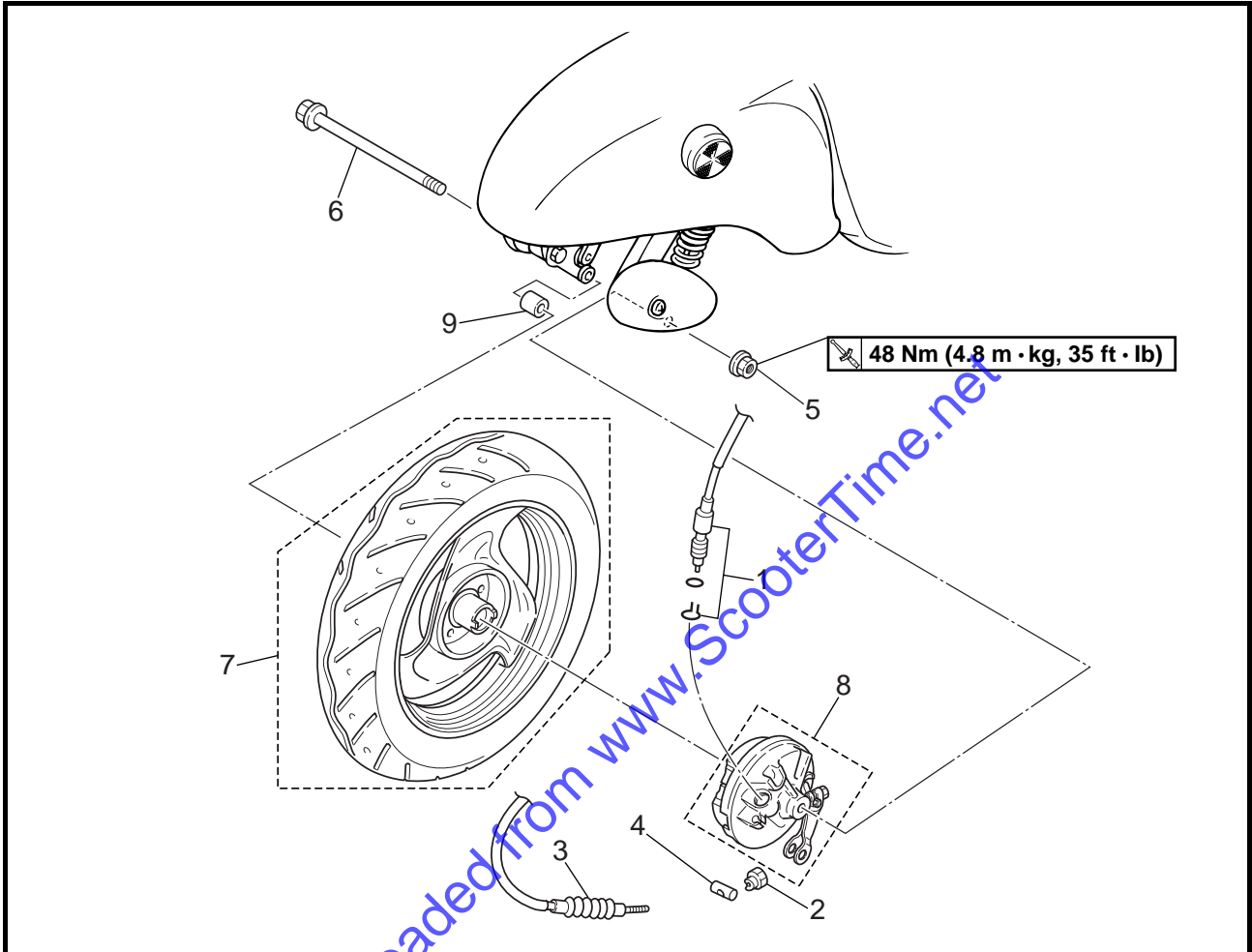
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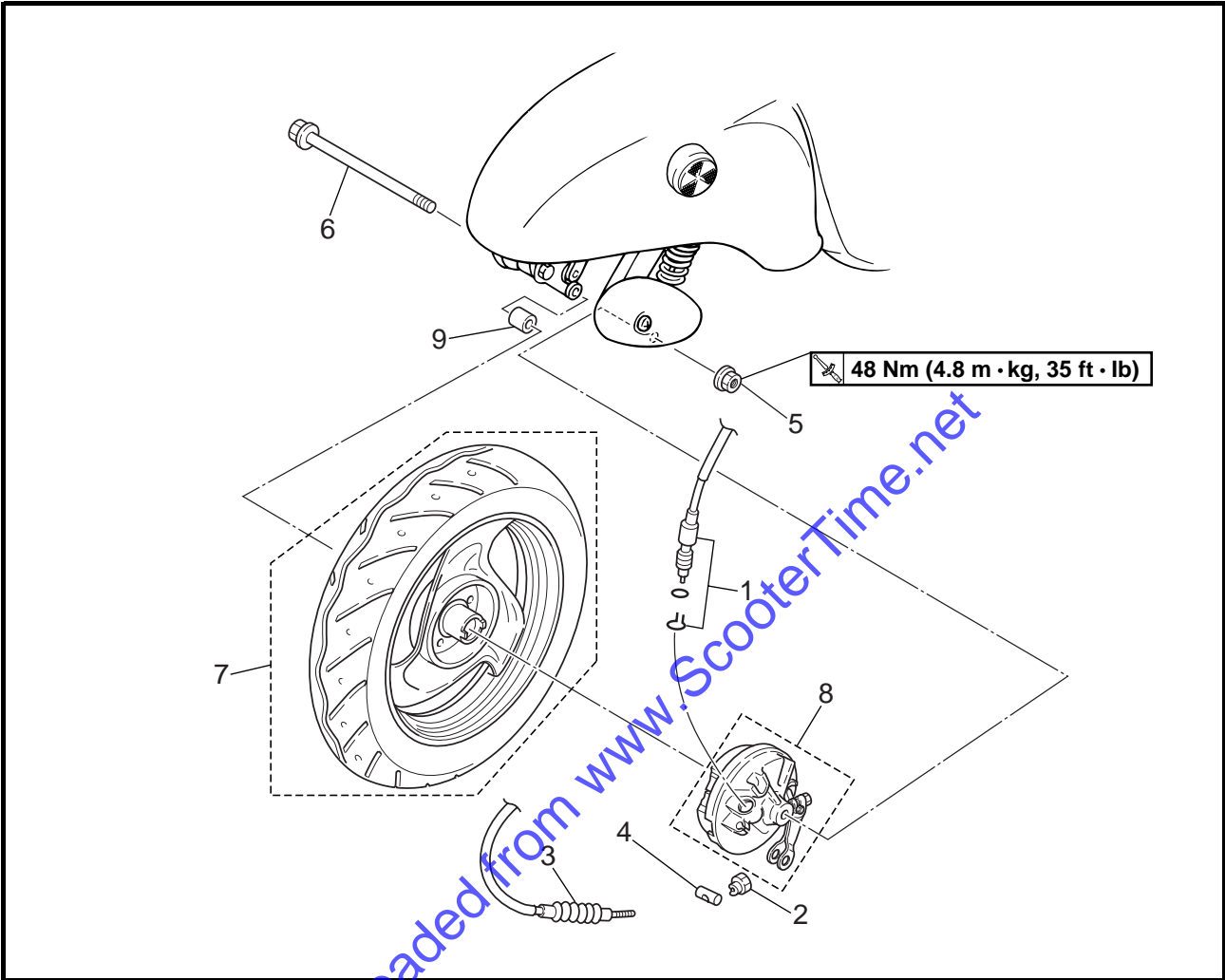
CHASSIS

FRONT WHEEL AND BRAKE

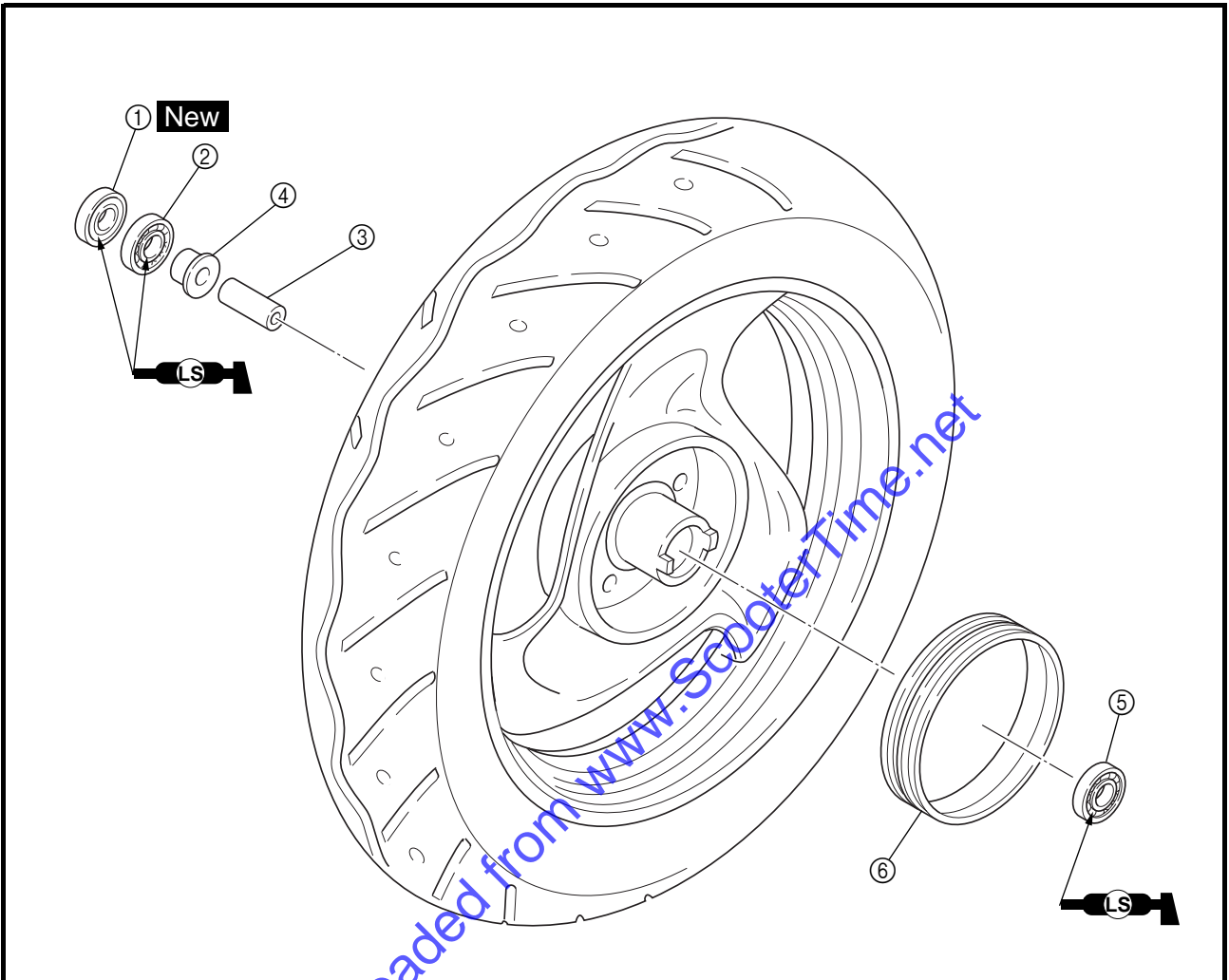


Order	Job/Part	Q'ty	Remarks
	Removing the front wheel and brake		Remove the parts in the order listed. NOTE: _____ Place the scooter on a suitable stand so that the front wheel is elevated.
1	Speedometer cable assembly	1	Refer to "INSTALLING THE FRONT WHEEL".
2	Adjusting nut	1	
3	Front brake cable	1	
4	Pin	1	
5	Axle nut	1	
6	Wheel axle	1	
7	Front wheel assembly	1	

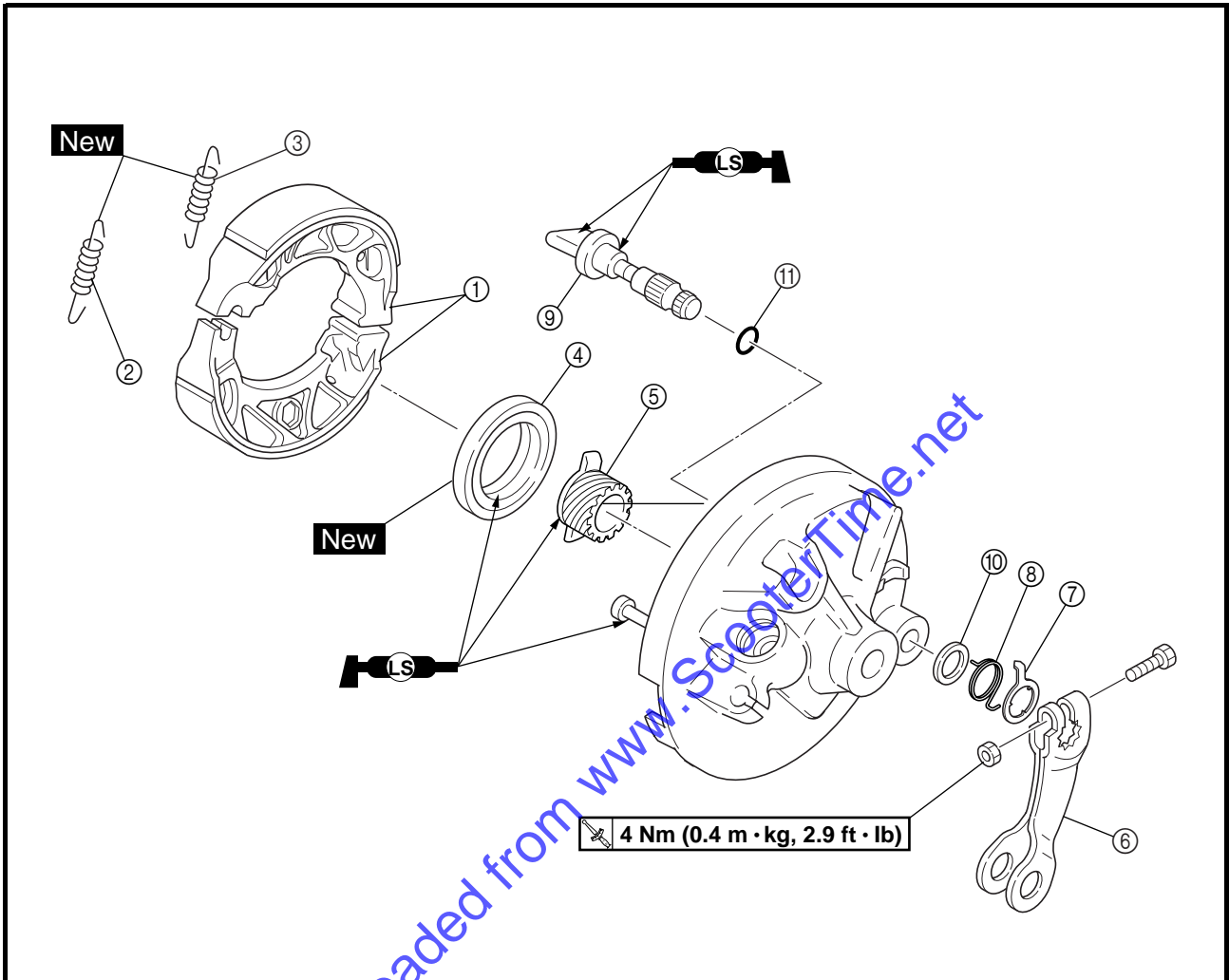
FRONT WHEEL AND BRAKE



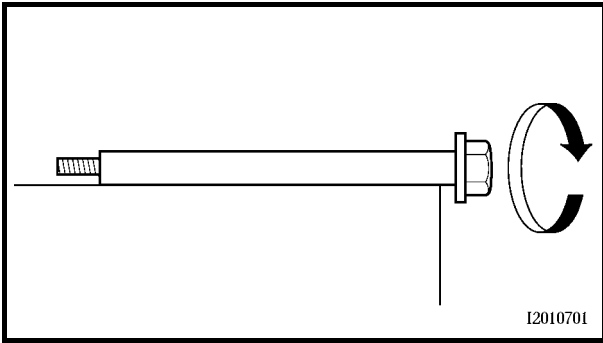
Order	Job/Part	Q'ty	Remarks
8	Front brake shoe plate	1	For installation, reverse the removal procedure.
9	Spacer	1	



Order	Job/Part	Q'ty	Remarks
	Disassembling the front wheel		Remove the parts in the order listed.
①	Oil seal	1	Refer to "CHECKING THE FRONT WHEEL".
②	Wheel bearing (right)	1	
③	Spacer	1	
④	Collar	1	
⑤	Wheel bearing (left)	1	
⑥	Dust seal	1	
			For assembly, reverse the disassembly procedure.



Order	Job/Part	Q'ty	Remarks
	Disassembling the front brake shoe plate		Remove the parts in the order listed.
①	Brake shoe	2	
②	Brake shoe spring (pin side)	1	
③	Brake shoe spring (brake camshaft side)	1	
④	Bushing	1	
⑤	Speedometer drive gear	1	
⑥	Brake camshaft lever	1	
⑦	Brake shoe wear indicator	1	
⑧	Spring	1	
⑨	Brake camshaft	1	
⑩	Oil seal	1	
⑪	O-ring	1	
			For assembly, reverse the disassembly procedure.



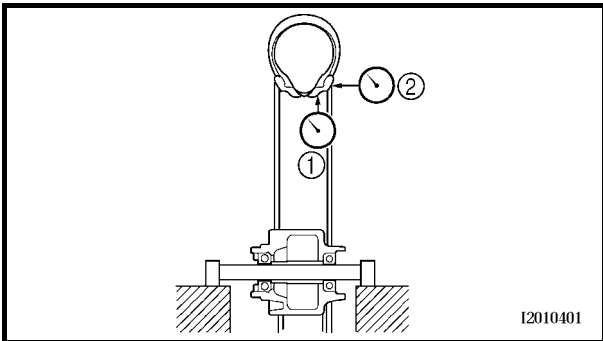
EAS00525

CHECKING THE FRONT WHEEL

1. Check:
 - wheel axle
 - Roll the wheel axle on a flat surface.
 - Bends → Replace.

⚠ WARNING

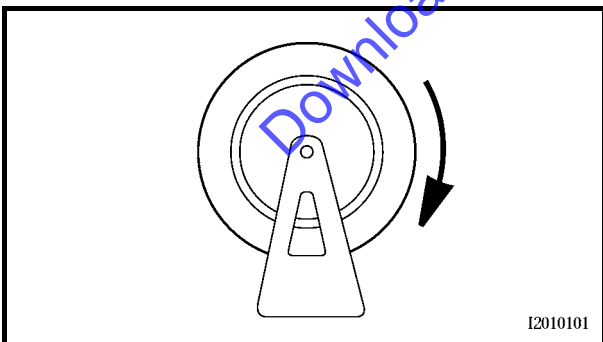
Do not attempt to straighten a bent wheel axle.



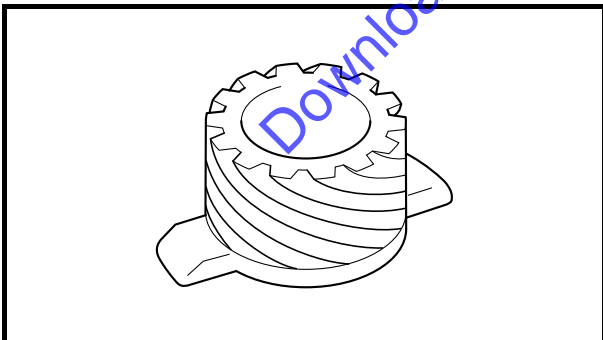
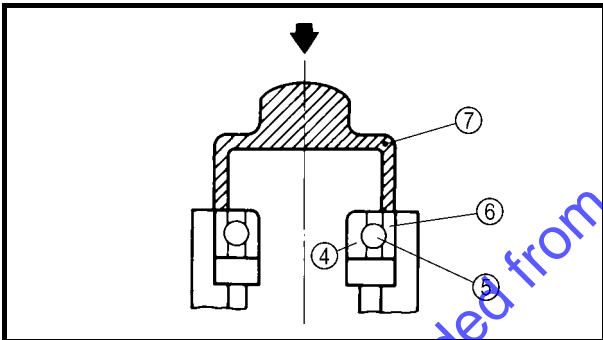
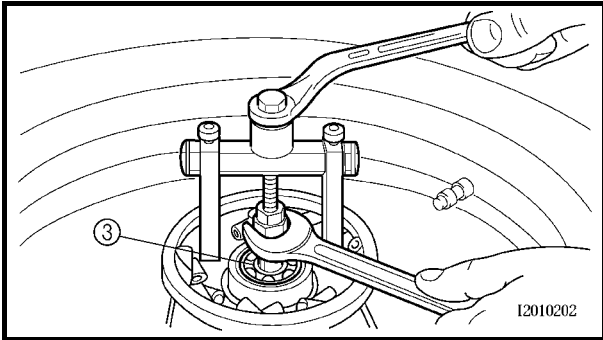
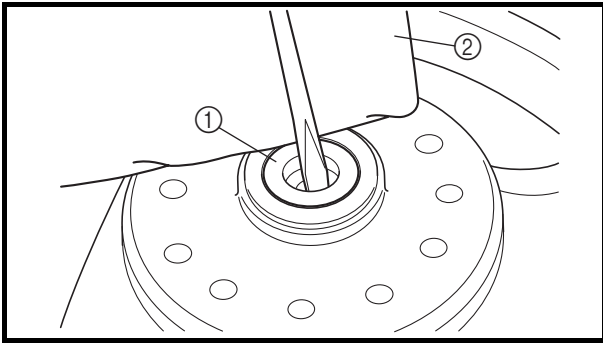
2. Check:
 - tire
 - front wheel
 - Damage/wear → Replace.
 - Refer to “CHECKING THE TIRES” and “CHECKING THE WHEELS” in chapter 3.
3. Measure:
 - radial wheel runout ①
 - lateral wheel runout ②
 - Over the specified limits → Replace.



**Radial wheel runout limit
1.0 mm (0.04 in)
Lateral wheel runout limit
1.0 mm (0.04 in)**



4. Check:
 - wheel bearings
 - Front wheel turns roughly or is loose → Replace the wheel bearings.
 - oil seal
 - Damage/wear → Replace.



5. Replace:
- oil seal **New**
 - wheel bearings **New**

- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- Clean the outside of the front wheel hub.
 - Remove the oil seal ① with a flat-head screwdriver.

NOTE: _____
To prevent damaging the wheel, place a rag ② between the screwdriver and the wheel surface.

- Remove the wheel bearings ③ with a general bearing puller.
- Install the new wheel bearings and oil seal in the reverse order of disassembly.

CAUTION: _____
Do not contact the wheel bearing inner race ④ or balls ⑤. Contact should be made only with the outer race ⑥.

NOTE: _____
Use a socket ⑦ that matches the diameter of the wheel bearing outer race and oil seal.



EAS00535
CHECKING THE SPEEDOMETER GEAR UNIT

- Check:
 - speedometer drive gear
Damage/wear → Replace.

EAS00536

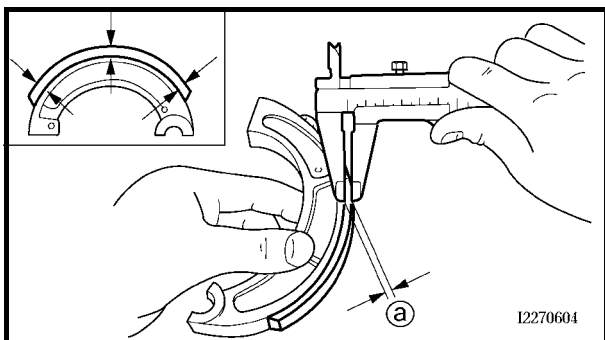
CHECKING THE BRAKE

The following procedure applies to all of the brake shoes.

1. Check:
 - brake shoe lining
Glazed areas → Repair.
Sand the glazed areas with course sandpaper.

NOTE:

After sanding the glazed areas, clean the brake shoe with a cloth.



2. Measure:
 - brake shoe lining thickness @
Out of specification → Replace.



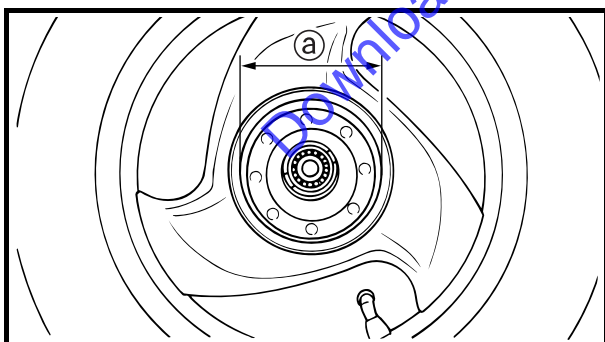
Brake shoe lining thickness limit (minimum)
2 mm (0.08 in)

⚠ WARNING

Do not allow oil or grease to contact the brake shoes.

NOTE:

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

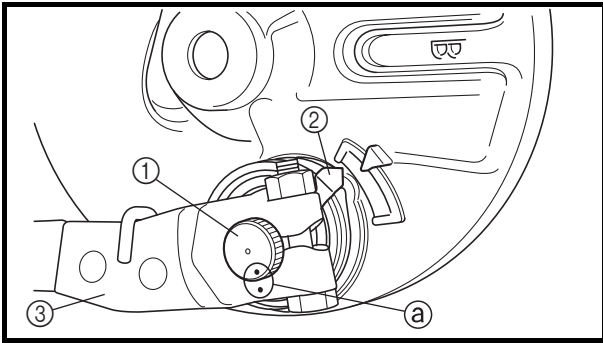


3. Measure:
 - brake drum inside diameter @
Out of specification → Replace the wheel.



Brake drum inside diameter limit (maximum)
110.5 mm (4.35 in)

4. Check:
 - brake drum inner surface
Oil deposits → Clean.
Remove the oil with a rag soaked in lacquer thinner or solvent.
Scratches → Repair.
Lightly and evenly polish the scratches with an emery cloth.
5. Check:
 - brake camshaft
Damage/wear → Replace.



EAS00537

ASSEMBLING THE BRAKE SHOE PLATE

1. Install:
 - brake camshaft ①
 - spring
 - brake shoe wear indicator ②
 - brake camshaft lever ③

- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- a. Align the projection on the brake shoe wear indicator with the notch in the brake camshaft.
 - b. Install the brake camshaft so its punch mark ① is positioned as shown.
 - c. Check that the brake shoes are properly positioned.

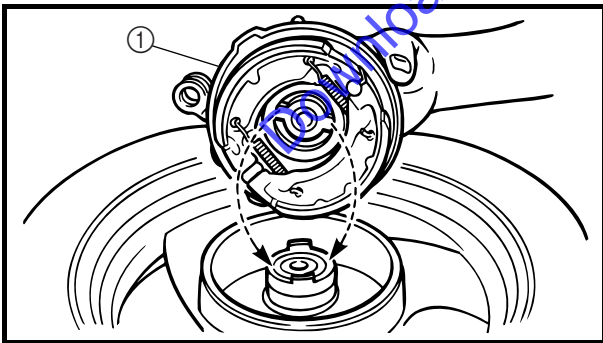
- ▲▲▲ ▲▲▲▲ ▲▲▲▲ ▲▲▲▲ ▲▲▲▲ ▲▲▲▲
2. Install:
 - speedometer drive gear
 - bushing

EAS00540

INSTALLING THE FRONT WHEEL

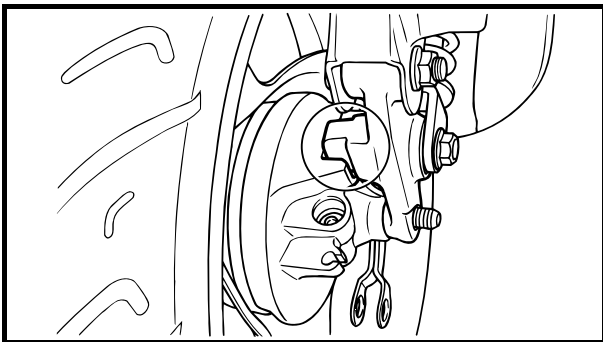
1. Lubricate:
 - wheel axle
 - wheel bearings
 - oil seal lips
 - speedometer drive gear

	Recommended lubricant Lithium soap base grease
---	--



2. Install:
 - brake shoe plate ①

Align the tabs on the wheel hub with the slit between the speedometer drive gear and the bushing.
3. Install:
 - collar




4. Install:
 - front wheel

NOTE: _____
 Make sure the slot in the brake shoe plate fits over the stopper on the outer tube.



5. Tighten:

- wheel axle nut

 48 Nm (4.8 m · kg, 35 ft · lb)

⚠ WARNING

Make sure the brake cable is routed properly.

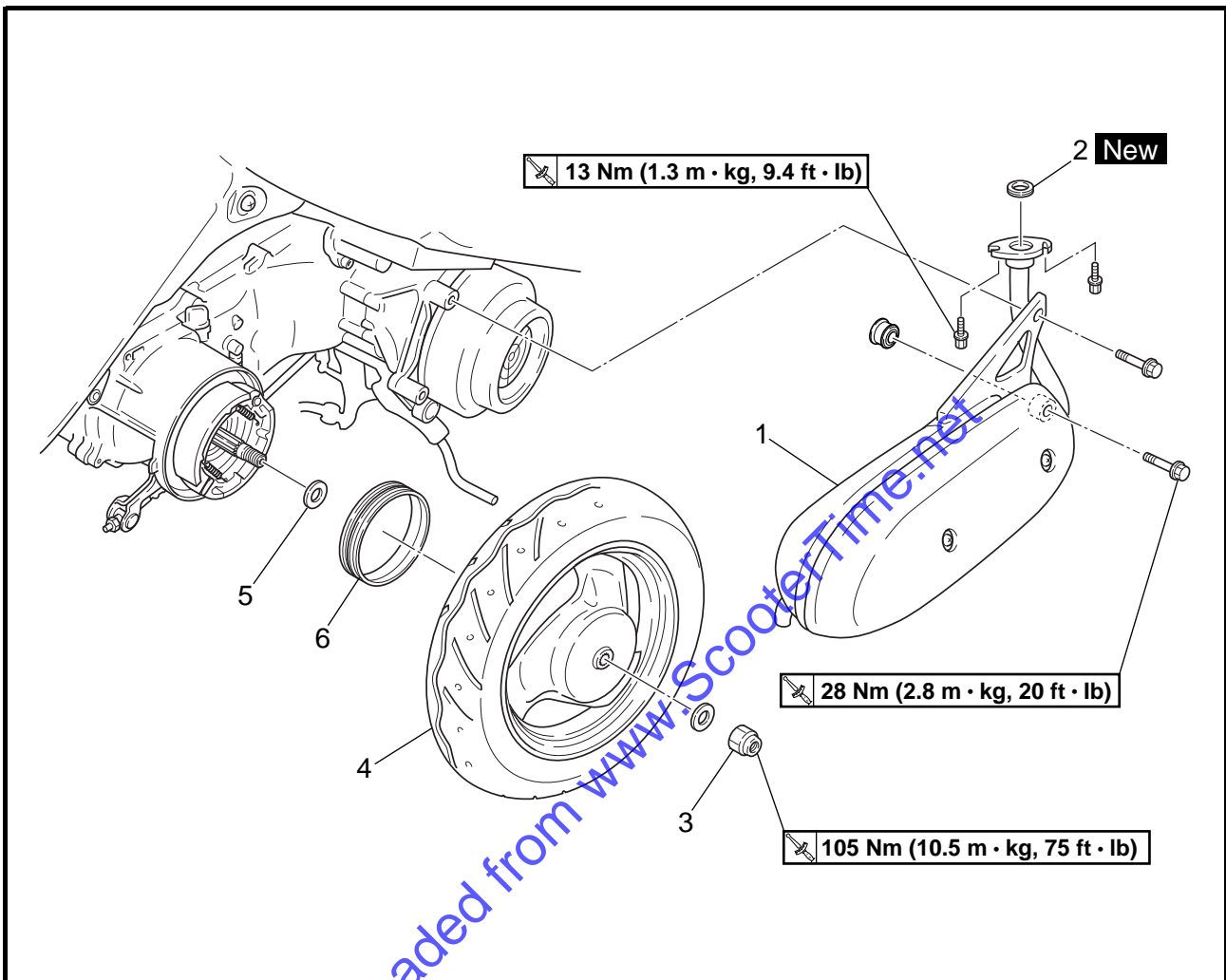
CAUTION:

Before tightening the wheel axle nut, push down hard on the handlebar several times and check if the front fork rebounds smoothly.

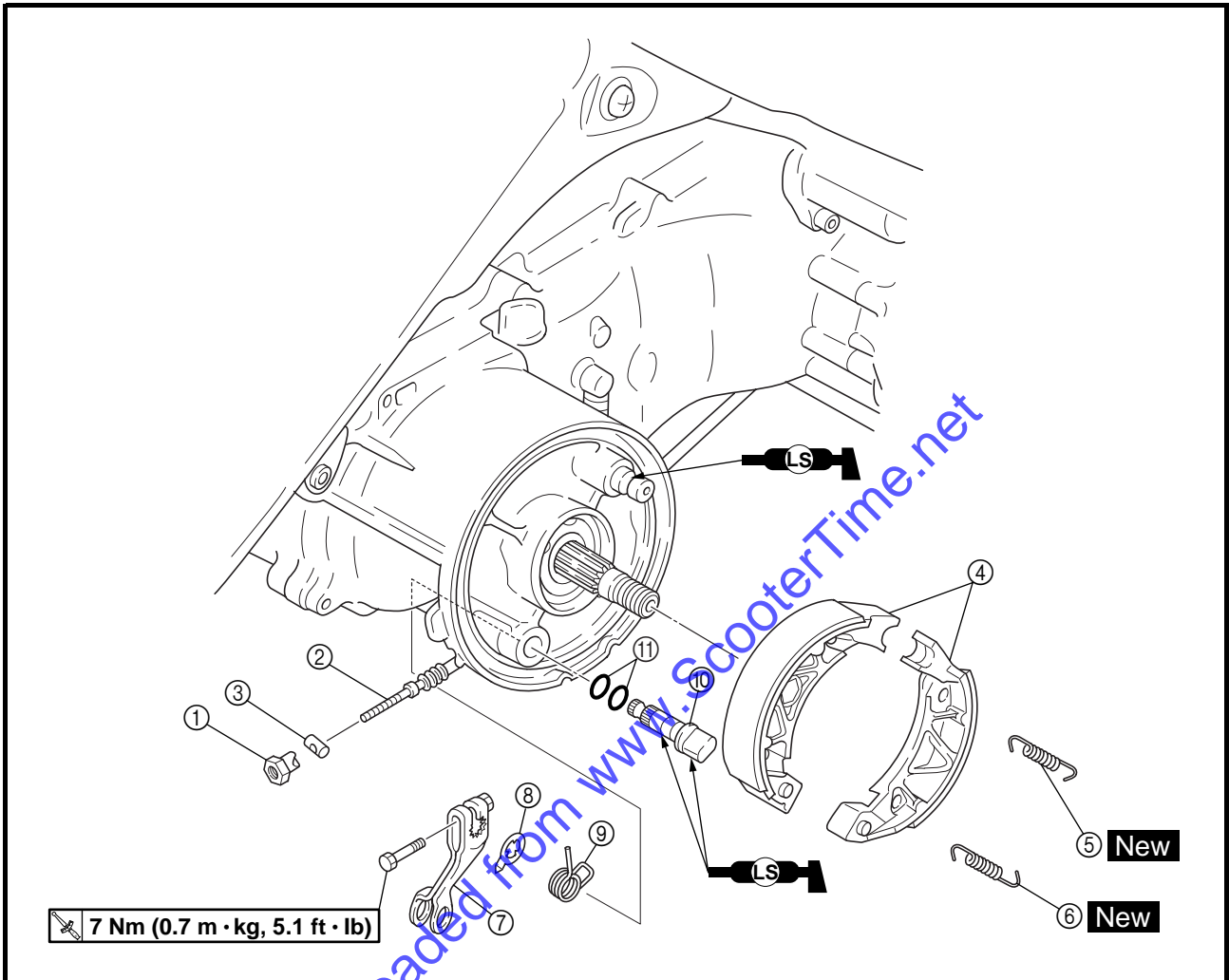
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EAS00551

REAR WHEEL AND BRAKE



Order	Job/Part	Q'ty	Remarks
	Removing the rear wheel and brake		Remove the parts in the order listed. NOTE: _____ Place the scooter on a suitable stand so that the rear wheel is elevated.
1	Muller	1	
2	Gasket	1	
3	Axle nut	1	
4	Rear wheel assembly	1	
5	Washer	1	
6	Dust seal	1	
			For installation, reverse the removal procedure.



Order	Job/Part	Q'ty	Remarks
	Removing the rear brake shoe plate		Remove the parts in the order listed.
①	Adjusting nut	1	
②	Rear brake cable	1	
③	Pin	1	
④	Brake shoe	2	
⑤	Brake shoe spring (pin side)	1	
⑥	Brake shoe spring (brake camshaft side)	1	
⑦	Brake camshaft lever	1	
⑧	Brake shoe wear indicator	1	
⑨	Spring	1	
⑩	Brake camshaft	1	
⑪	O-ring	2	
			For installation, reverse the removal procedure.

EAS00565

CHECKING THE REAR WHEEL

1. Check:
 - rear wheel
Refer to “CHECKING THE FRONT WHEEL”.
2. Check:
 - tire
 - rear wheel
Damage/wear → Replace.
Refer to “CHECKING THE TIRES” and “CHECKING THE WHEELS” in chapter 3.
3. Measure:
 - radial wheel runout
 - lateral wheel runout
Refer to “CHECKING THE FRONT WHEEL”.

EAS00569


CHECKING THE BRAKE

The following procedure applies to all of the brake shoes.

1. Check:
 - brake shoe lining
Glazed areas → Repair.
Sand the glazed areas with course sandpaper.

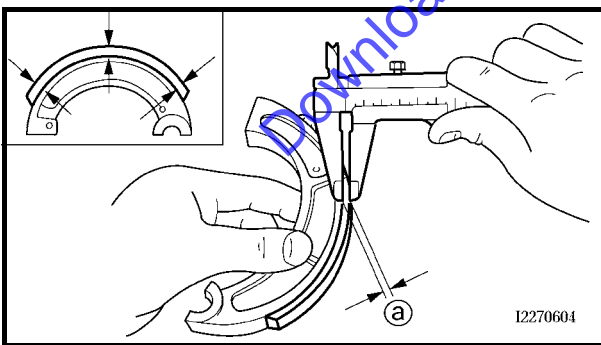
NOTE: _____
After sanding the glazed areas, clean the brake shoe with a cloth.

2. Measure:
 - brake shoe lining thickness (a)
Out of specification → Replace.

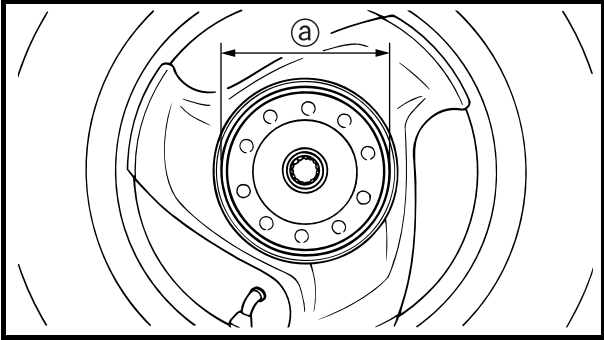
	<p>Brake shoe lining thickness limit (minimum) 2 mm (0.08 in)</p>
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⚠ WARNING _____
Do not allow oil or grease to contact the brake shoes.

NOTE: _____
Replace the brake shoes as a set, if either is worn to the wear limit.



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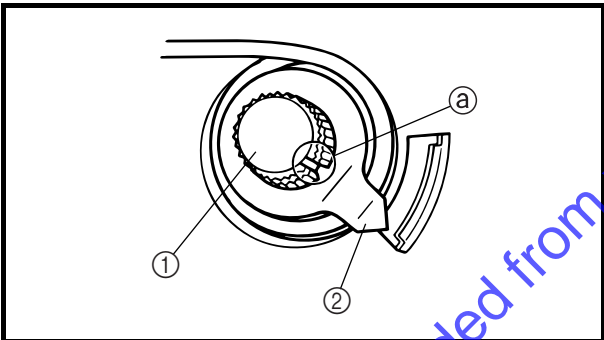


3. Measure:
- brake drum inside diameter ①
- Out of specification → Replace the wheel.



Brake drum inside diameter limit (maximum)
110.5 mm (4.35 in)

4. Check:
- brake drum inner surface
- Oil deposits → Clean.
 Remove the oil with a rag soaked in lacquer thinner or solvent.
- Scratches → Repair.
 Lightly and evenly polish the scratches with an emery cloth.
5. Check:
- brake camshaft
- Damage/wear → Replace.



EAS00570

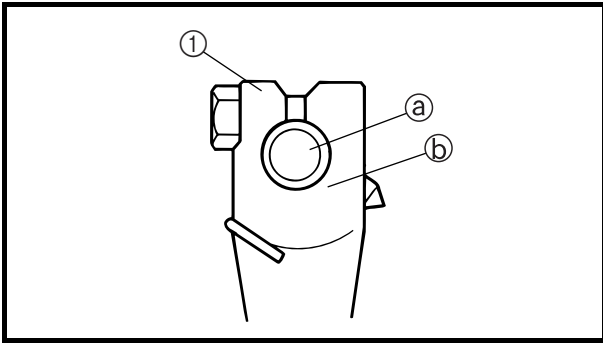
INSTALLING THE BRAKE SHOE PLATE

1. Install:
- brake camshaft ①
 - spring
 - brake shoe wear indicator ②

- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- a. Align the projection ③ on the brake shoe wear indicator with the notch in the brake shoe camshaft.
- b. Install the brake camshaft so its punch mark is positioned as shown.
- c. Check that the brake shoes are properly positioned.



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EAS00573

INSTALLING THE BRAKE SHOES

1. Install:

- brake camshaft lever ①

NOTE:

- Align the punch mark ① in the brake camshaft with the mark ② on the brake camshaft lever.
- Lubricate the brake camshaft and pin with lithium soap base grease.

⚠ WARNING

After installing the rear brake camshaft, remove any excess grease.

2. Install:

- brake shoes

NOTE:


Do not to damage the springs during installation.

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INSTALLING THE REAR WHEEL

1. Tighten:

- wheel axle nut

 105 Nm (10.5 m · kg, 75 ft · lb)

CAUTION:

Do not loosen the wheel axle nut after tightening it to the specified torque.

2. Install:

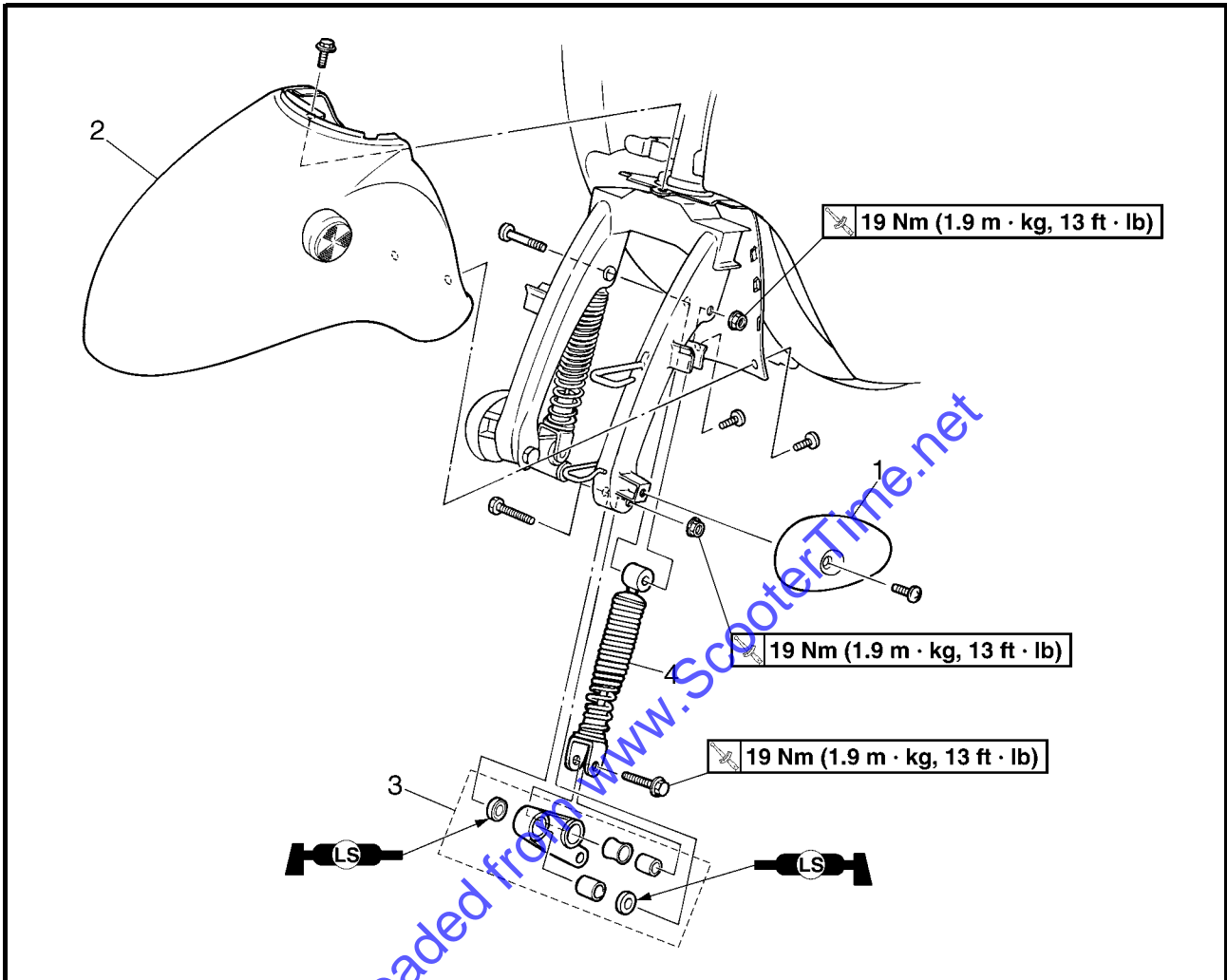
- rear brake cable
- adjuster

3. Adjust:

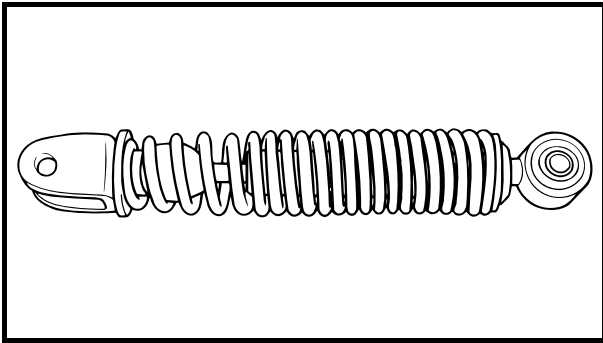
- brake lever free play
Refer to “ADJUSTING THE REAR BRAKE” in chapter 3.

EAS00647

FRONT SHOCK ABSORBER ASSEMBLIES



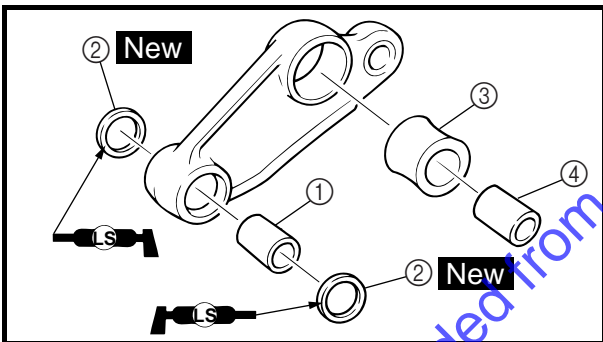
Order	Job/Part	Q'ty	Remarks
	Removing the front shock absorber assemblies		Remove the parts in the order listed.
	Front panel		The following procedure applies to both of the front shock absorbers.
	Front wheel		Refer to "FRONT PANEL AND LEG SHIELD" in chapter 3.
			Refer to "FRONT WHEEL AND BRAKE".
1	Relay arm cover	2	
2	Front fender	1	
3	Relay arm assembly	2	
4	Front shock absorber assembly (left/right)	2	
			For installation, reverse the removal procedure.



CHECKING THE FRONT SHOCK ABSORBER ASSEMBLIES

The following procedure applies to both front shock absorber assemblies.

1. Check:
 - front shock absorber rod
Bends/damage → Replace the front shock absorber assembly.
 - front shock absorber
Oil leaks → Replace the front shock absorber assembly.
 - spring
Damage/wear → Replace the front shock absorber assembly.
 - bolt
Bends/damage/wear → Replace.



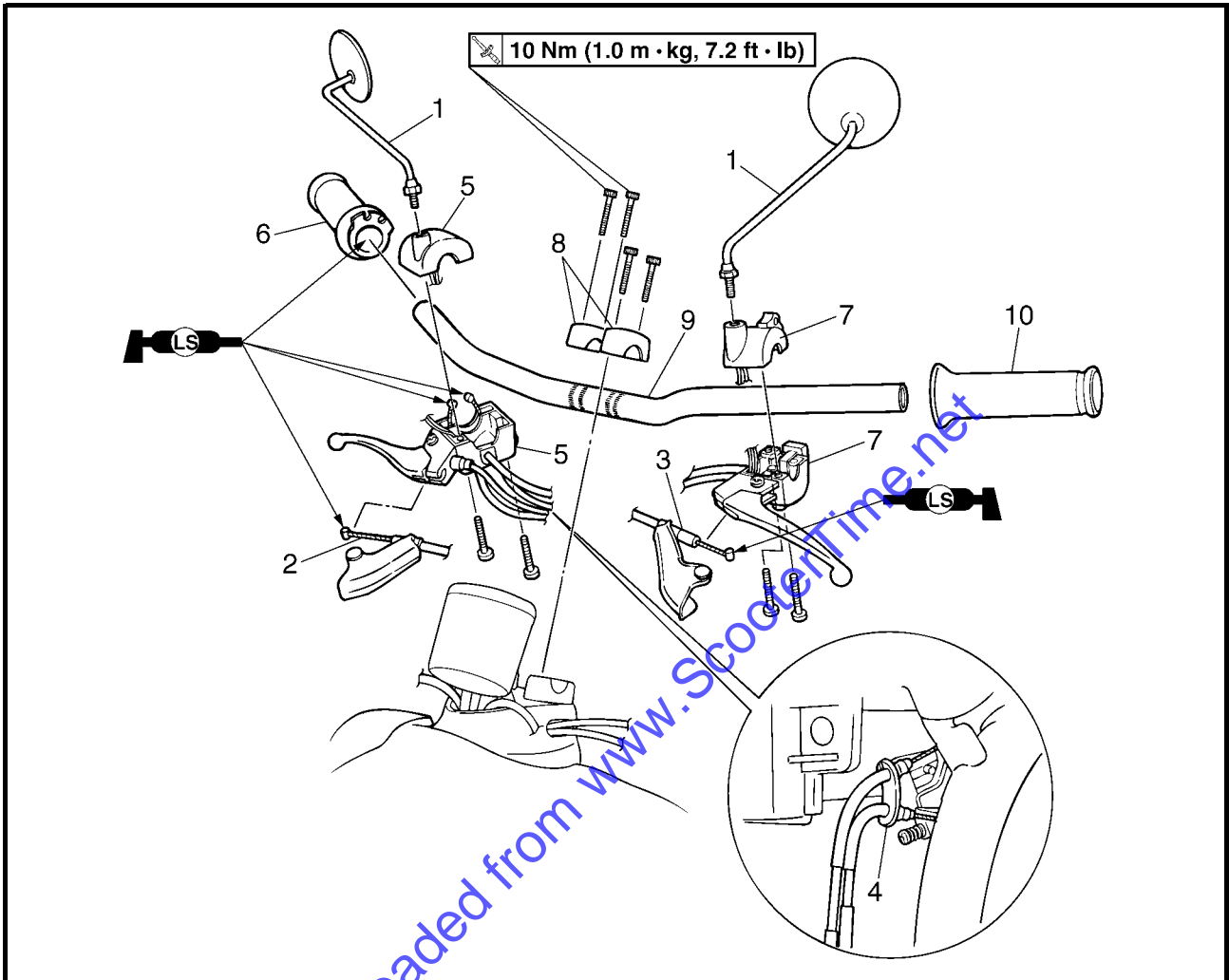
INSTALLING THE RELAY ARM

1. Install:
 - metal spacer ①
 - oil seal ② **New**
 - bushing ③
 - spacer ④

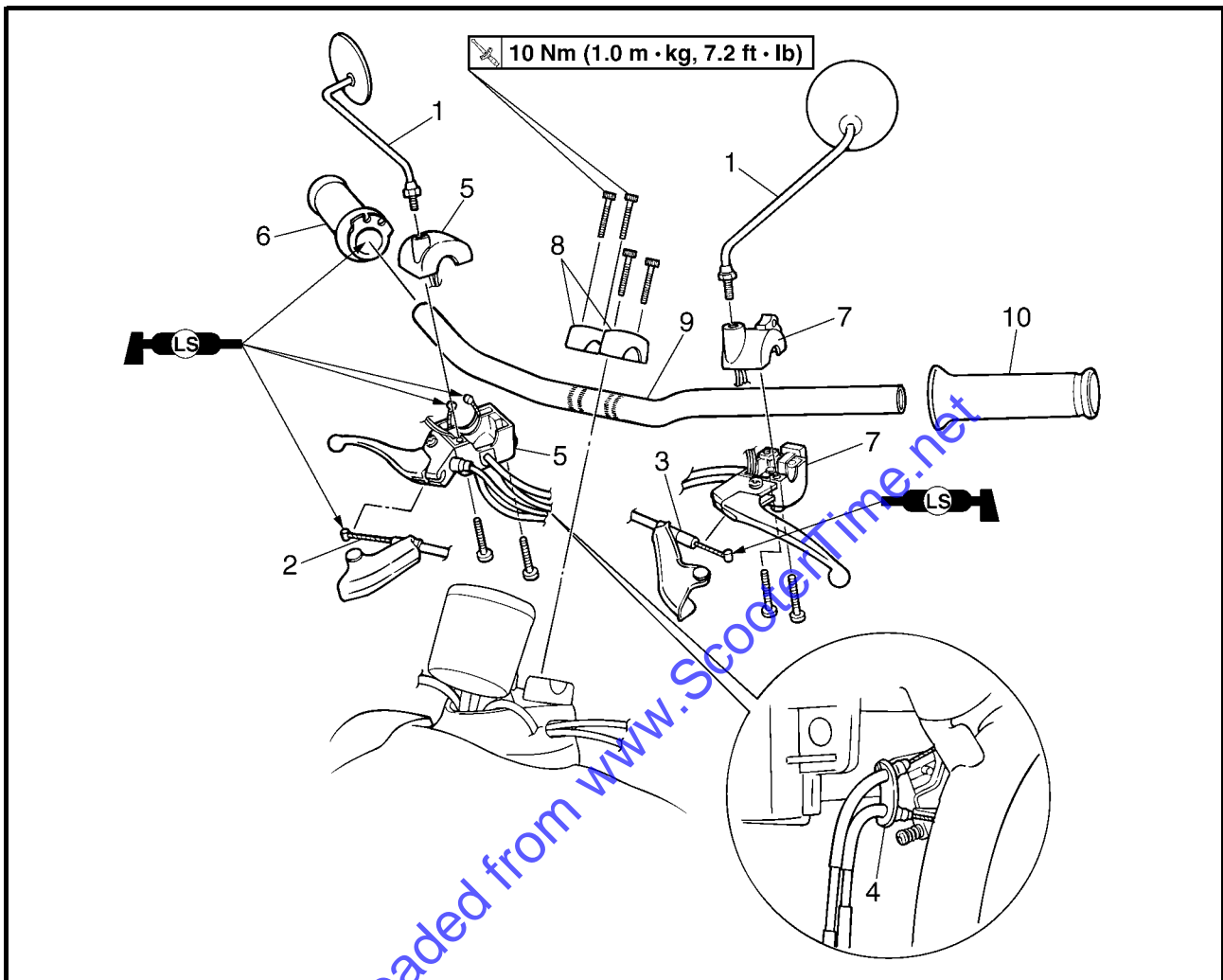
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EAS00664

HANDLEBAR



Order	Job/Part	Q'ty	Remarks
	Removing the handlebar switches and handlebar grips		Remove the parts in the order listed.
	Center cover		Refer to "SIDE COVERS AND FOOT-REST BOARD" in chapter 3.
1	Rear view mirror (left/right)	2	
2	Front brake cable	1	
3	Rear brake cable	1	
4	Throttle cable holder	1	Loosen.
5	Right handlebar switch	1	
6	Throttle grip	1	



Order	Job/Part	Q'ty	Remarks
7	Left handlebar switch	1	Refer to "INSTALLING THE HANDLE-BAR".
8	Upper handlebar holder	2	
9	Handlebar	1	
10	Handlebar grip	1	Refer to "REMOVING THE HANDLE-BAR". For installation, reverse the removal procedure.

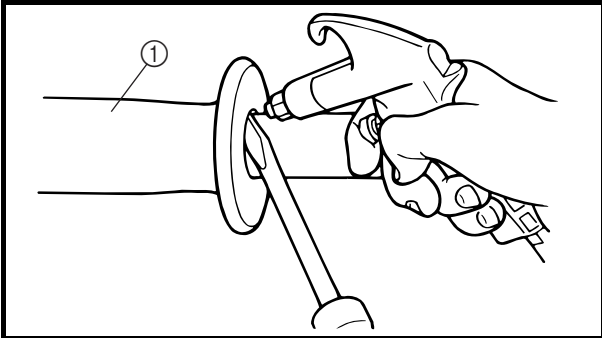
EAS00666

REMOVING THE HANDLEBAR

1. Stand the scooter on a level surface.

⚠ WARNING

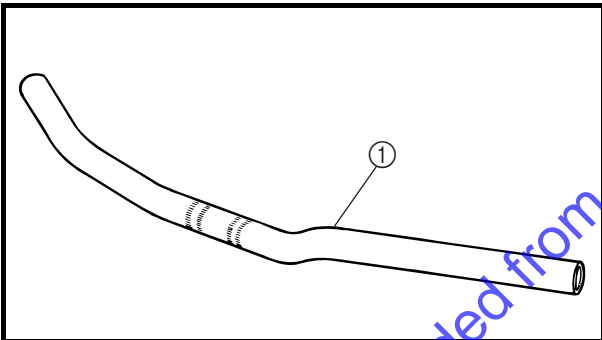
Securely support the scooter so that there is no danger of it falling over.



2. Remove:
 - handlebar grip ①

NOTE:

Blow compressed air between the handlebar and the handlebar grip, and gradually push the grip off the handlebar.



EAS00668

CHECKING THE HANDLEBAR

1. Stand the scooter on a level surface.

⚠ WARNING

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

2. Check:
 - handlebar ①
Bends/cracks/damage → Replace.

⚠ WARNING

Do not attempt to straighten a bent handlebar as this may dangerously weaken it.

3. Install:
 - handlebar grip

- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- a. Apply a thin coat of rubber adhesive onto the left end of the handlebar.
- b. Slide the handlebar grip over the left end of the handlebar.
- c. Wipe off any excess rubber adhesive with a clean rag.

⚠ WARNING

Do not touch the handlebar grip until the rubber adhesive has fully dried.



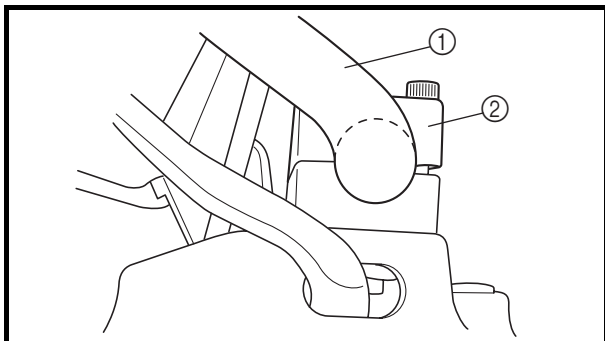
EAS00671

INSTALLING THE HANDLEBAR

1. Stand the scooter on a level surface.


⚠ WARNING

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



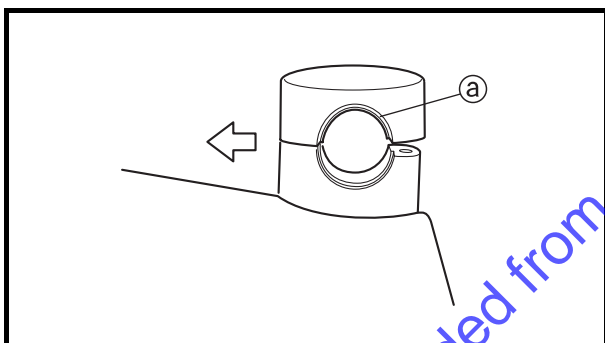
2. Install:

- handlebar ①
- upper handlebar holders ②

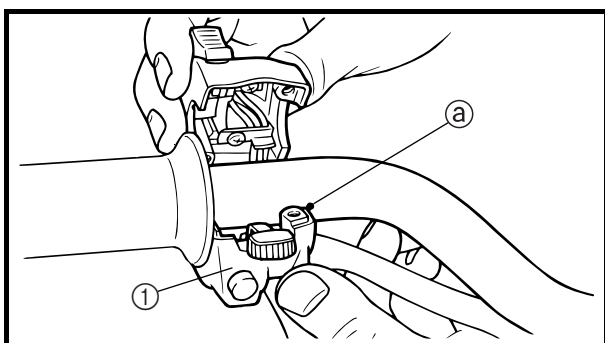
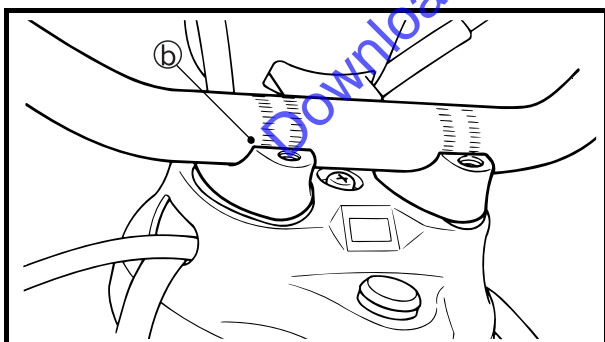
 **10 Nm (1.0 m · kg, 7.2 ft · lb)**

CAUTION:

- **First, tighten the bolts on the front side of the handlebar holder, and then on the rear side.**

**NOTE:**

- Install the upper handlebar holders with the grooves a facing inward.
- Align the match marks b on the handlebar with the upper surface of the lower handlebar holder.

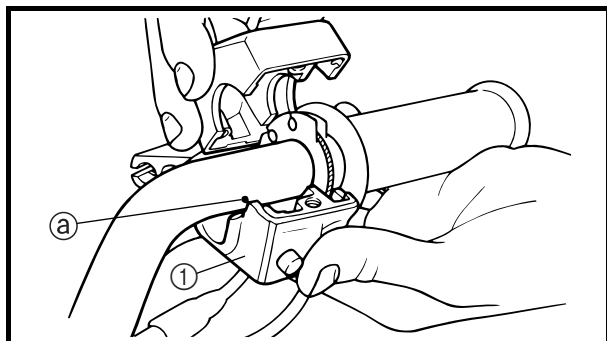


3. Install:

- left handlebar switch ①

NOTE:

Align the mating surfaces of the left handlebar switch with the punch mark a on the handlebar.



4. Install:
- throttle grip
 - throttle cable

NOTE:

Lubricate the inside of the throttle grip with a thin coat of lithium soap base grease and install it onto the handlebar.

5. Install:
- right handlebar switch ①

⚠ WARNING

Make sure the throttle grip operates smoothly.

NOTE:

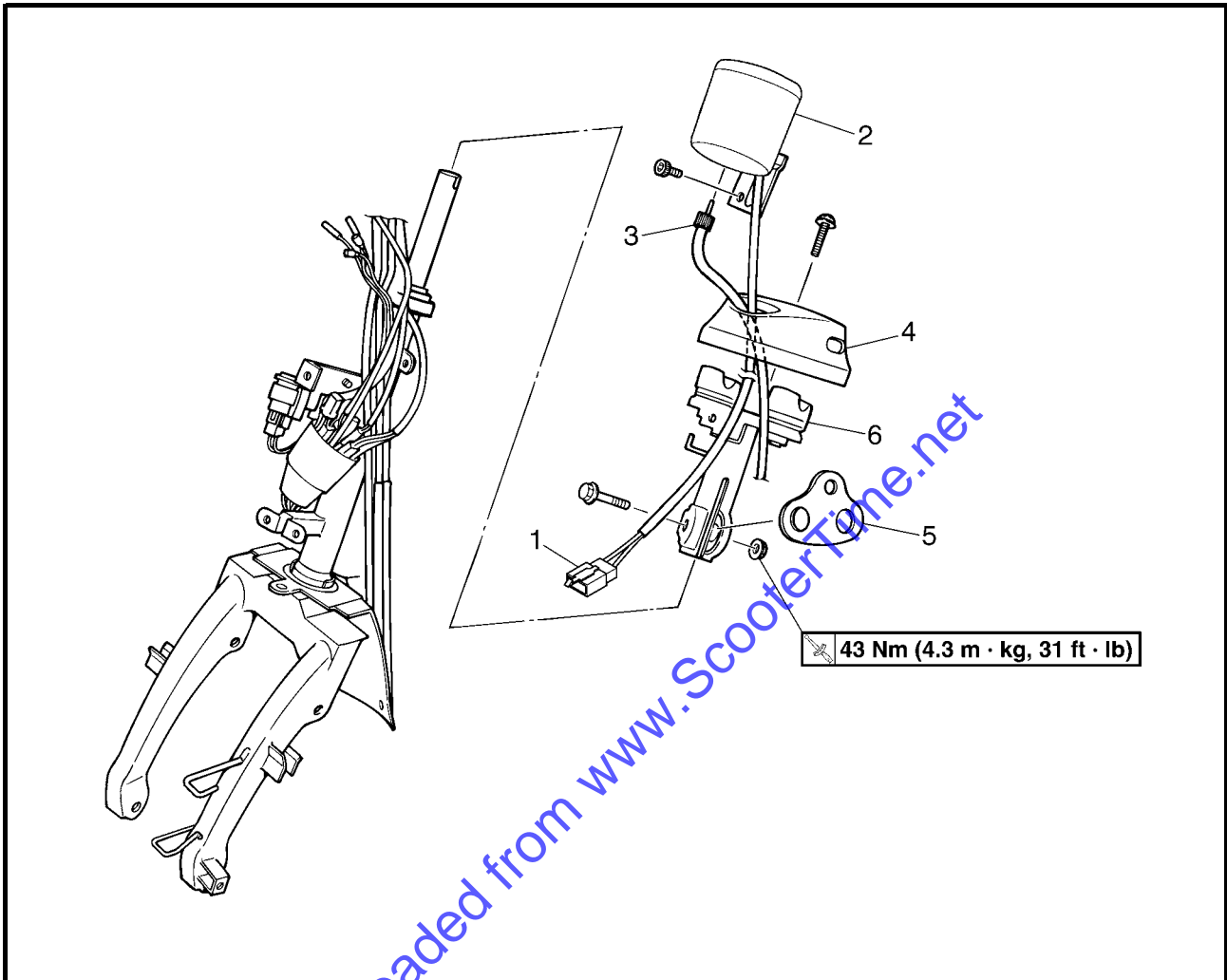
Align the mating surfaces of the right handlebar switch with the punch mark ① on the handlebar.

6. Adjust:
- throttle cable free play
- Refer to "ADJUSTING THE THROTTLE CABLE FREE PLAY" in chapter 3.

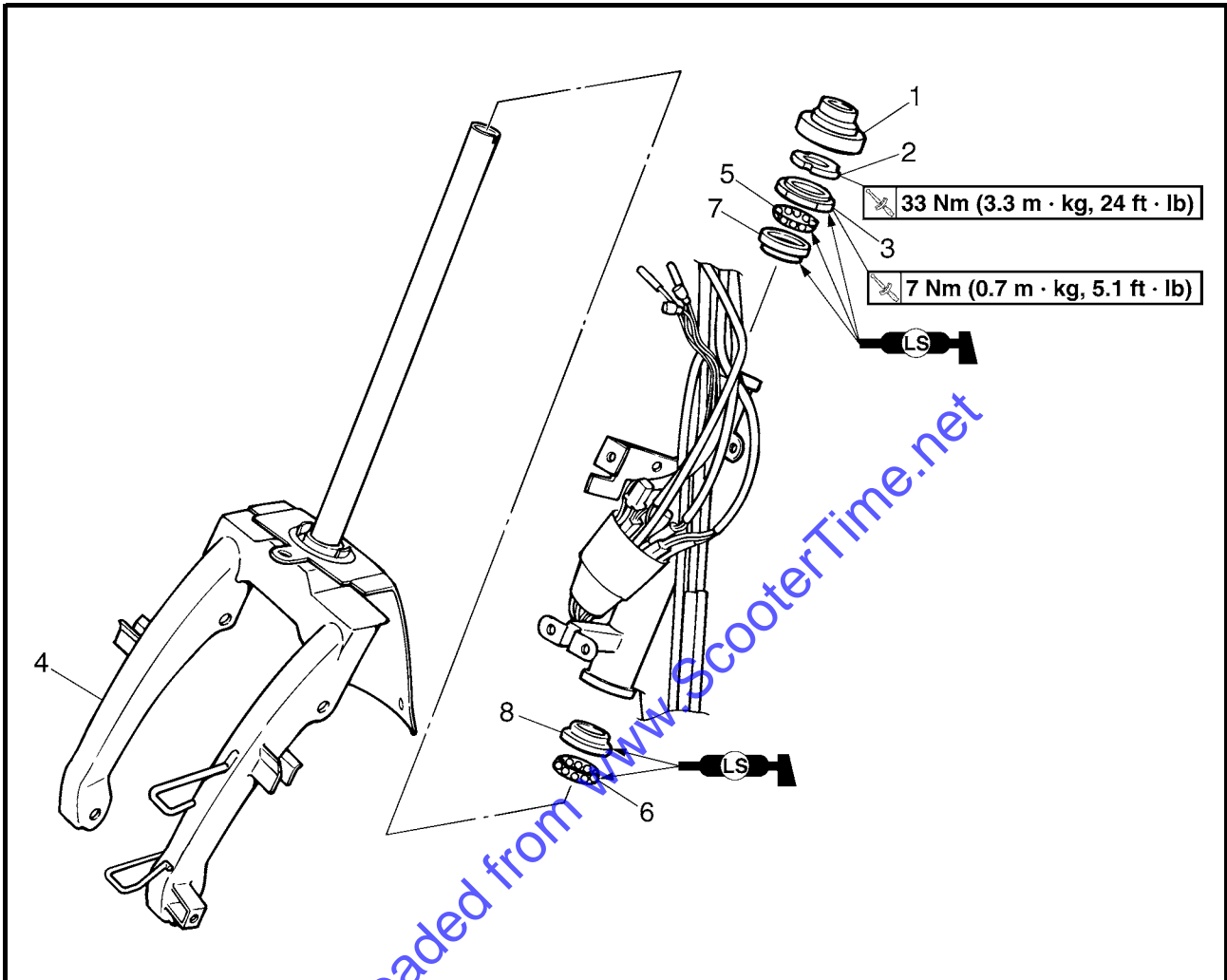


**Throttle cable free play
(at the flange of the throttle grip)
1.5 ~ 3.5 mm (0.06 ~ 0.14 in)**

STEERING HEAD



Order	Job/Part	Q'ty	Remarks
	Removing the lower handlebar holder		Remove the parts in the order listed.
	Footrest board		Refer to "SIDE COVERS AND FOOT-REST BOARD" in chapter 3.
	Front panel/leg shield		Refer to "FRONT PANEL AND LEG SHIELD" in chapter 3.
	Front shock absorber assemblies		Refer to "FRONT SHOCK ABSORBER ASSEMBLIES".
	Handlebar		Refer to "HANDLEBAR".
1	Meter light lead coupler	1	Disconnect.
2	Speedometer assembly	1	
3	Speedometer cable	1	
4	Lower handlebar holder cover	1	
5	Rubber cover	1	
6	Lower handlebar holder bracket	1	For installation, reverse the removal procedure.



Order	Job/Part	Q'ty	Remarks
	Removing the fork		Remove the parts in the order listed.
1	Cover	1	
2	Upper steering stem ring nut	1	
3	Upper race	1	
4	Fork	1	
5	Upper bearing	1	
6	Lower bearing	1	
7	Upper bearing outer race	1	
8	Lower bearing outer race	1	
			For installation, reverse the removal procedure.



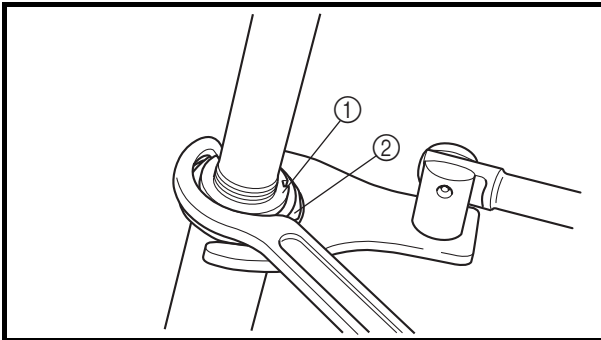
EAS00680

REMOVING THE FORK

1. Stand the scooter on a level surface.

⚠ WARNING

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



2. Remove:

- upper steering stem ring nut ①
- upper race ②

NOTE:

Hold the upper race with the steering nut wrench (45 mm), and then remove the upper steering stem ring nut with the steering nut wrench.



Steering nut wrench
YU-33975
Steering nut wrench (45 mm)
YU-01444

⚠ WARNING

Securely support the lower bracket so that there is no danger of it falling.

EAS00681

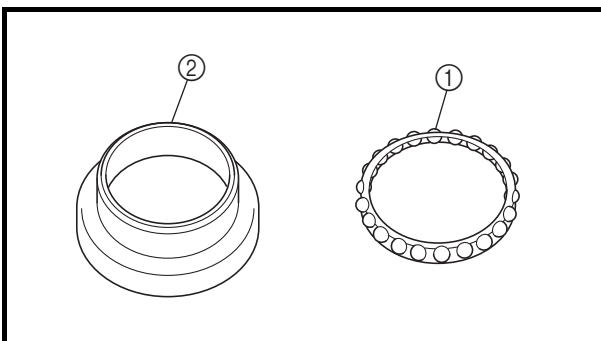
CHECKING THE STEERING HEAD

1. Wash:

- bearings
- bearing races

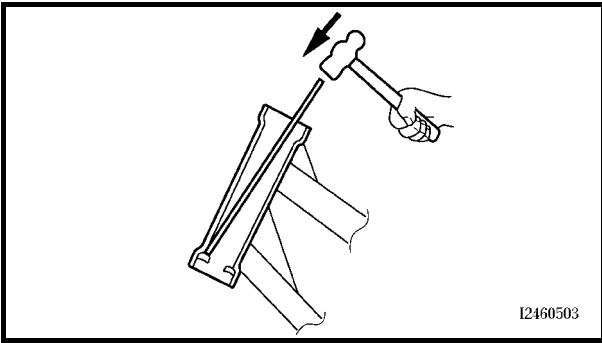


Recommended cleaning solvent
Kerosene



2. Check:

- bearings ①
 - bearing races ②
- Damage/pitting → Replace.



3. Replace:
- bearings
 - bearing races

- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- Remove the bearing races from the steering head pipe with a long rod ① and hammer.
 - Install new bearing races.

CAUTION:

If the bearing race is not installed properly, the steering head pipe could be damaged.

NOTE:

- Always replace the bearings and bearing races as a set.
- Whenever the steering head is disassembled, replace the rubber seal.

- ▲▲▲ ▲▲▲▲ ▲▲▲▲ ▲▲▲▲ ▲▲▲▲ ▲▲▲▲
4. Check:
- upper bracket
 - lower bracket (along with the steering stem)
- Bends/cracks/damage → Replace.

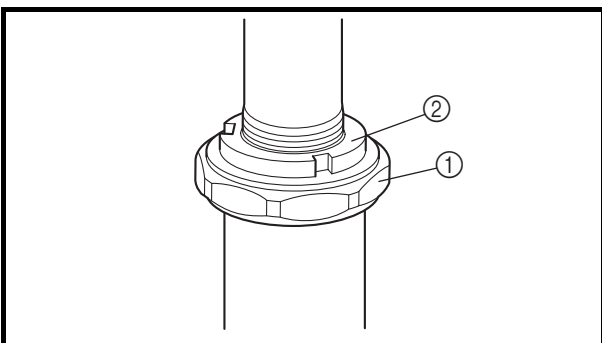
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EAS00684

INSTALLING THE STEERING HEAD

1. Lubricate:
- upper bearing
 - lower bearing
 - bearing races

	Recommended lubricant Lithium soap base grease
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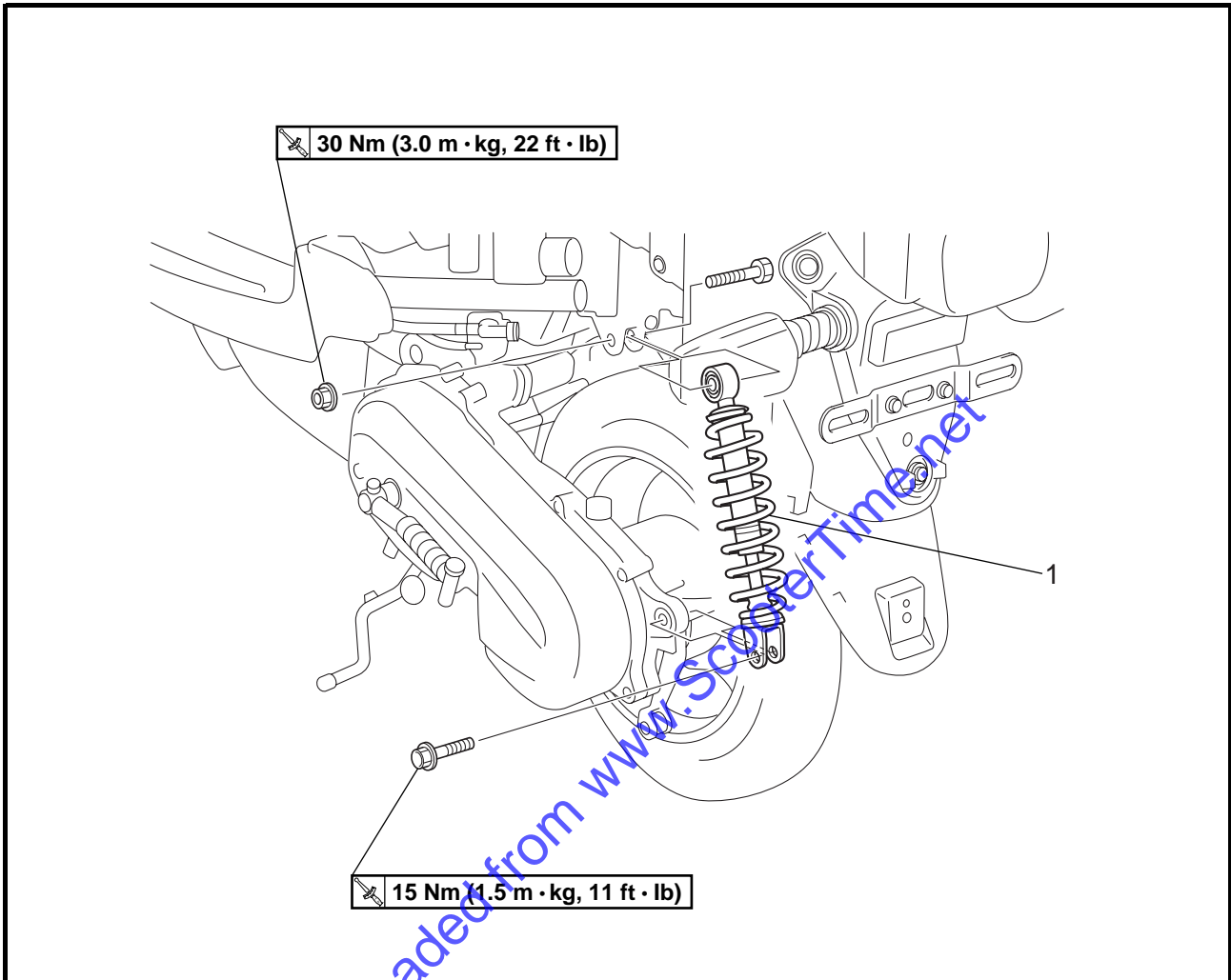


2. Install:
- upper race ① 7 Nm (0.7 m · kg, 5.1 ft · lb)
 - upper steering stem ring nut ② 33 Nm (3.3 m · kg, 24 ft · lb)

Refer to "CHECKING AND ADJUSTING THE STEERING HEAD" in chapter 3.

EAS00685

REAR SHOCK ABSORBER ASSEMBLY



Order	Job/Part	Q'ty	Remarks
	Removing the rear shock absorber assembly		Remove the parts in the order listed.
	Side cover (left)		Refer to "SIDE COVERS AND FOOT-REST BOARD" in chapter 3.
1	Rear shock absorber assembly	1	For installation, reverse the removal procedure.

EAS00692

REMOVING THE REAR SHOCK ABSORBER ASSEMBLY

1. Stand the scooter on a level surface.

⚠ WARNING

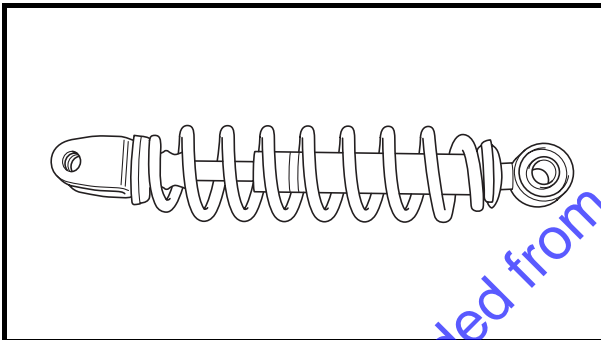
Securely support the scooter so that there is no danger of it falling over.

NOTE:

Place the scooter on a suitable stand so that the rear wheel is elevated.

2. Remove:

- rear shock absorber assembly



EAS00695

CHECKING THE REAR SHOCK ABSORBER ASSEMBLY

1. Check:


- rear shock absorber rod
Bends/damage → Replace the rear shock absorber assembly.
- rear shock absorber
Oil leaks → Replace the rear shock absorber assembly.
- spring
Damage/wear → Replace the rear shock absorber assembly.
- bolts
Bends/damage/wear → Replace.

EAS00697


INSTALLING THE REAR SHOCK ABSORBER ASSEMBLY

1. Install:

- rear shock absorber assembly
- rear shock absorber assembly upper nut

 **30 Nm (3.0 m · kg, 22 ft · lb)**

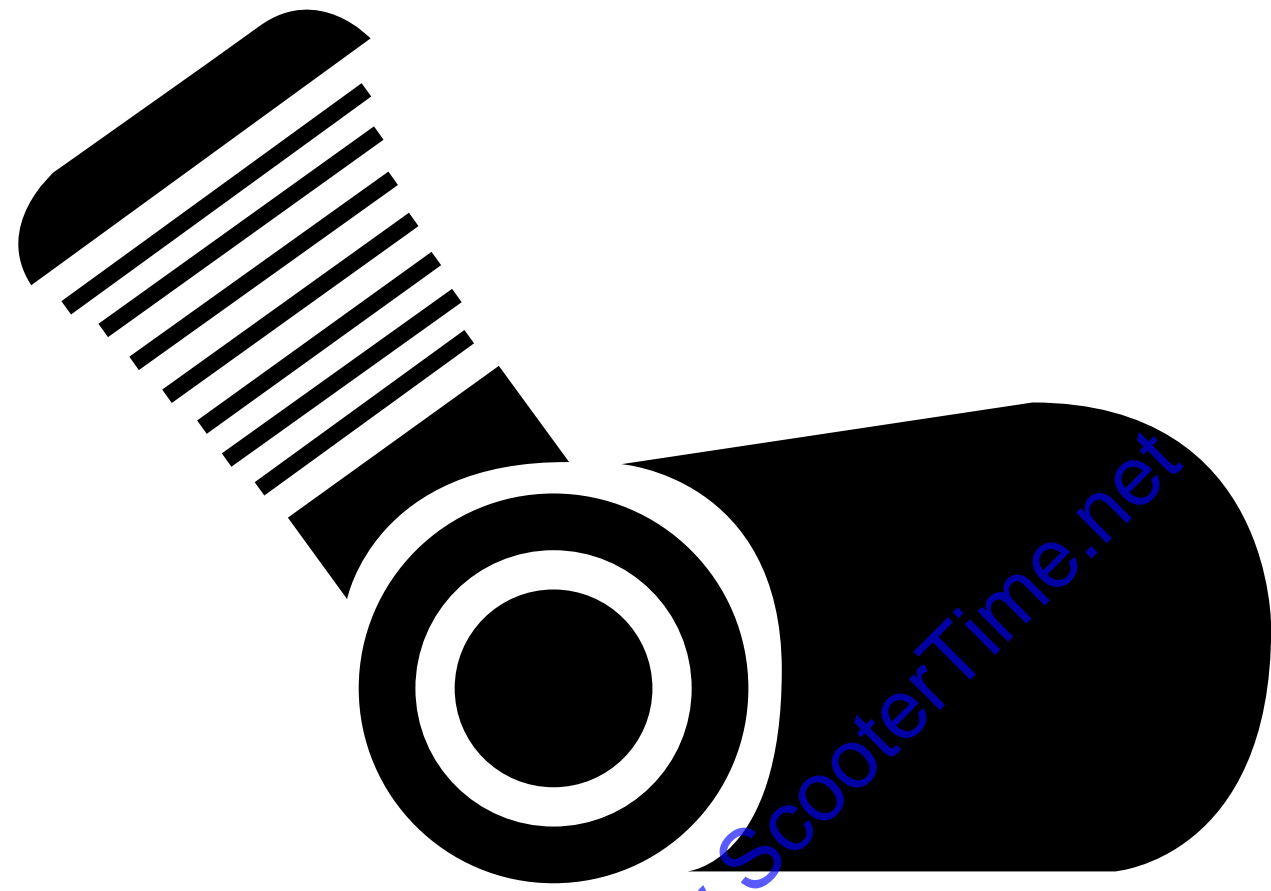
- rear shock absorber assembly lower bolt

 **15 Nm (1.5 m · kg, 11 ft · lb)**

NOTE:

When installing the rear shock absorber assembly, lift up the crankcase.

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ENG

5

CHAPTER 5 ENGINE

ENGINE REMOVAL	5-1
INSTALLING THE ENGINE.....	5-3
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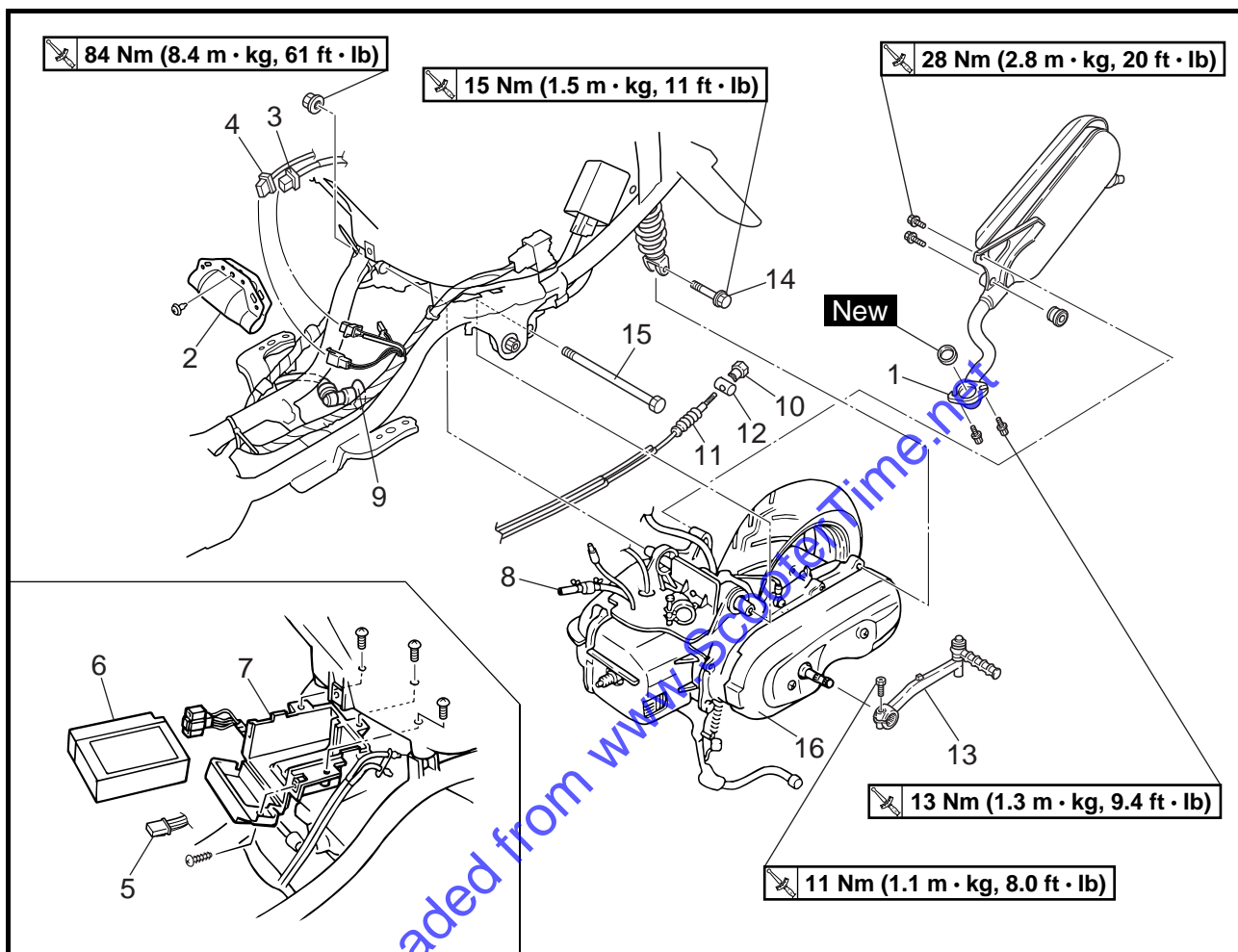
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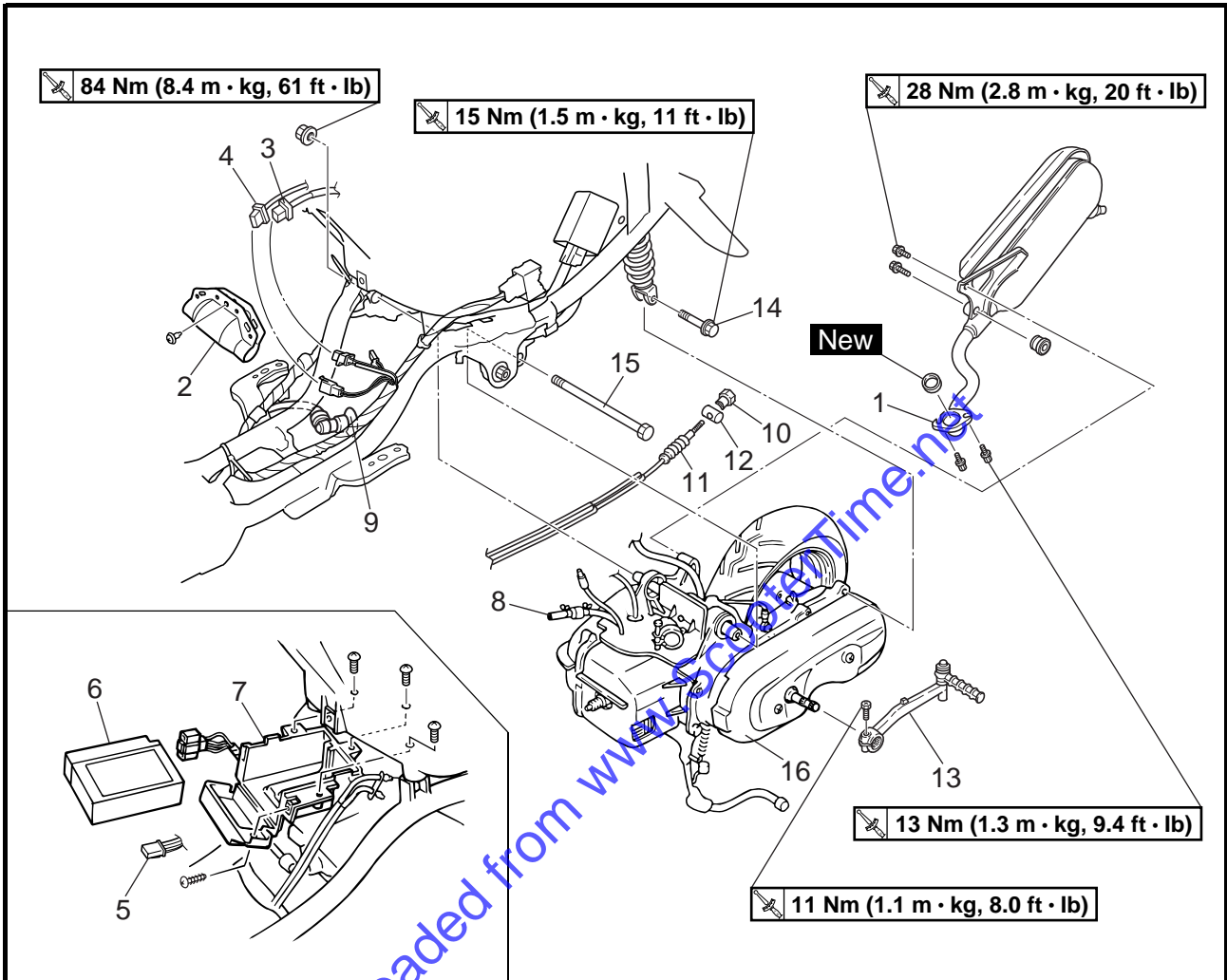


ENGINE

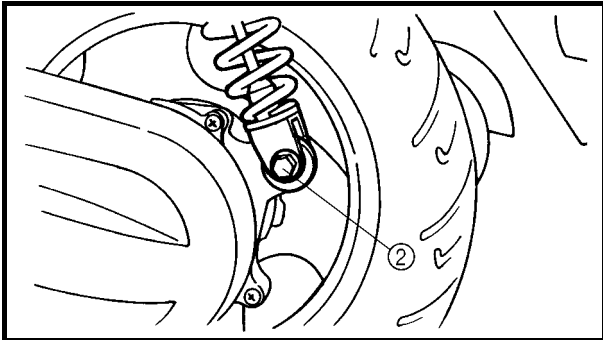
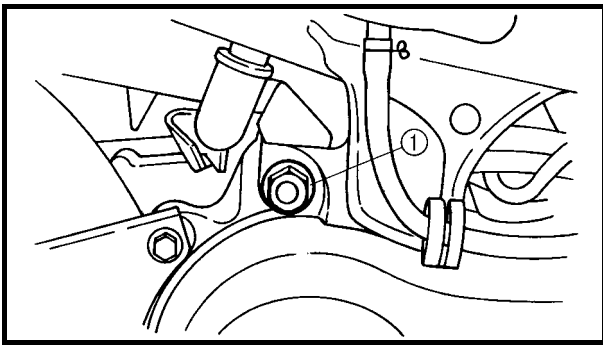
ENGINE REMOVAL



Order	Job/Part	Q'ty	Remarks
	Removing the engine		Remove the parts in the order listed.
	Center cover, side cover (left/right) and footrest board		Refer to "SIDE COVERS AND FOOTREST BOARD" in chapter 3.
	Carburetor		Refer to "CARBURETOR" in chapter 6.
1	Muffler	1	
2	Coupler cover	1	
3	Stator coil coupler	1	Disconnect.
4	Starter motor coupler	1	Disconnect.
5	Starter relay coupler	1	Disconnect.
6	Battery	1	
7	Battery box	1	
8	Oil hose	1	
9	Spark plug cap	1	



Order	Job/Part	Q'ty	Remarks
10	Adjusting nut	1	
11	Rear brake cable	1	
12	Pin	1	
13	Kickstarter crank	1	
14	Bolt (rear shock absorber-lower)	1	
15	Engine mounting bolt/nut	1/1	
16	Engine assembly	1	
			For installation, reverse the removal procedure.




EAS00192


INSTALLING THE ENGINE

1. Install:

- engine mounting bolt/nut ①


 **84 Nm (8.4 m · kg, 61 ft · lb)**

- bolt (rear shock absorber-lower) ②

 **15 Nm (1.5 m · kg, 11 ft · lb)**


2. Install:

- kickstarter crank


 **11 Nm (1.1 m · kg, 8.0 ft · lb)**

- muffler

- bolts

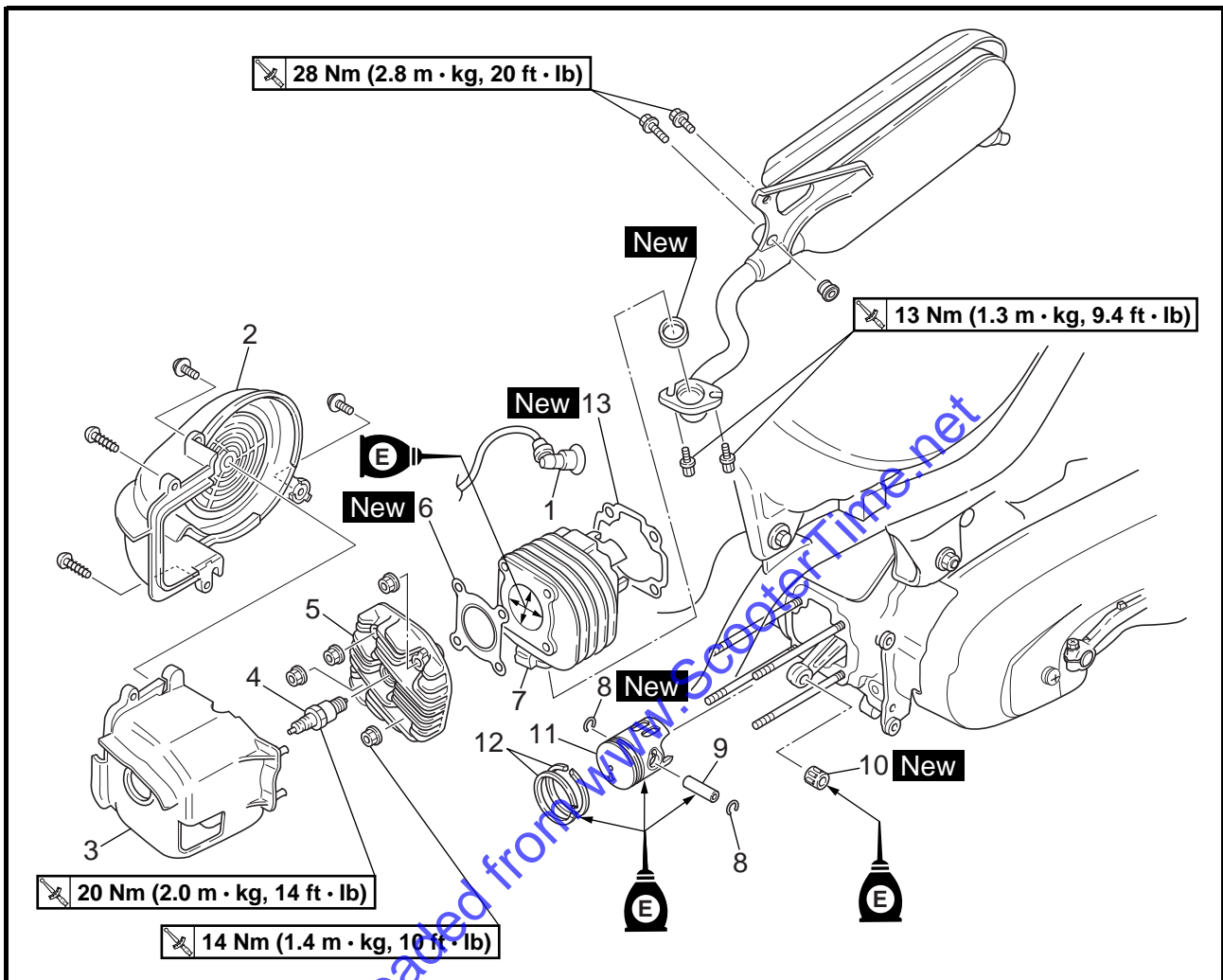
 **28 Nm (2.8 m · kg, 20 ft · lb)**

- exhaust pipe bolts

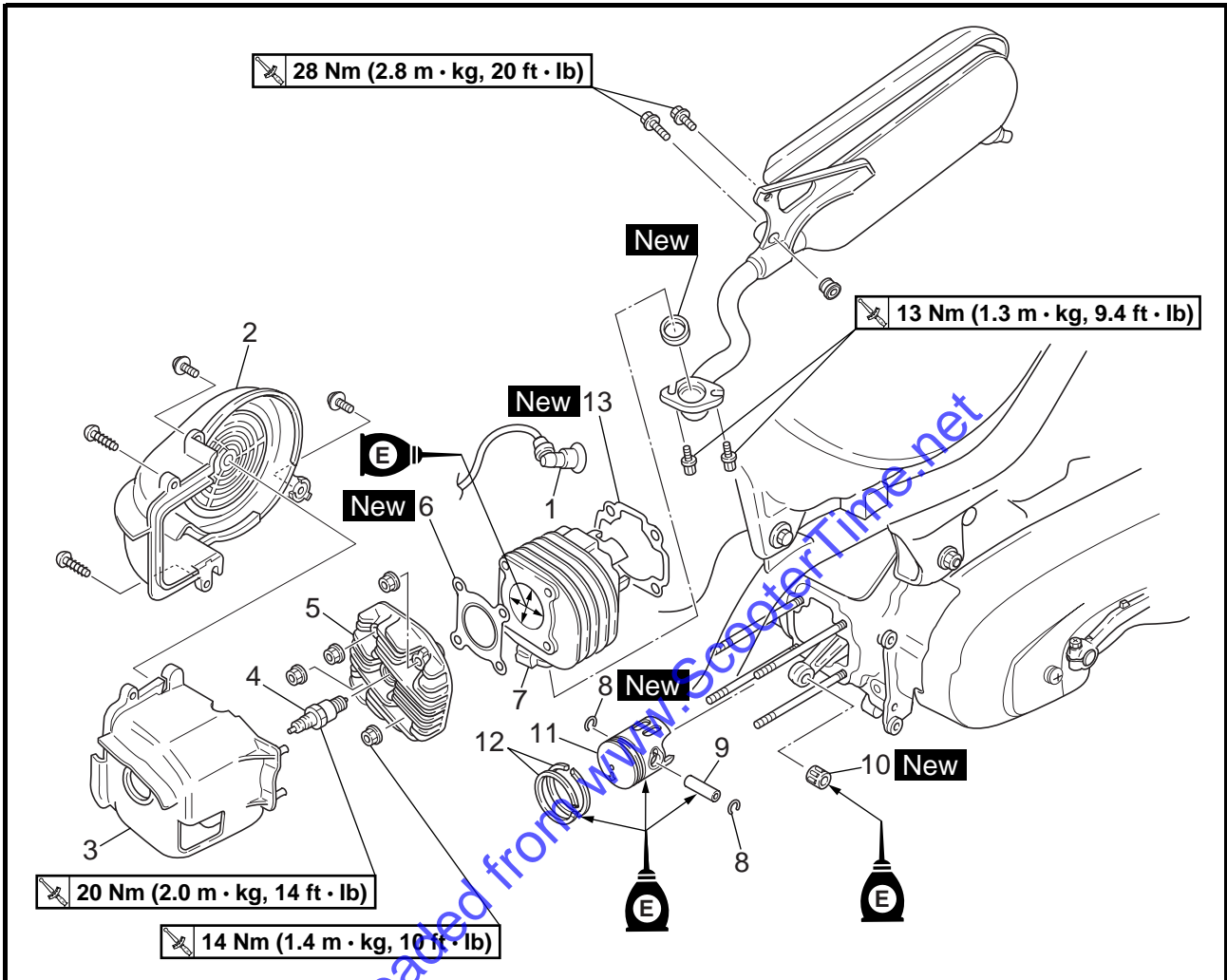
 **13 Nm (1.3 m · kg, 9.4 ft · lb)**

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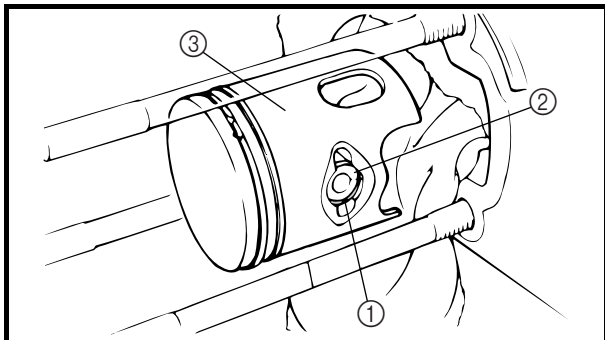
CYLINDER HEAD, CYLINDER AND PISTON



Order	Job/Part	Q'ty	Remarks
	Removing the cylinder head, cylinder and piston		Remove the parts in the order listed.
	Center cover, side cover (left/right) and footrest board		Refer to "SIDE COVERS AND FOOTREST BOARD" in chapter 3.
	Muffler/gasket		Refer to "ENGINE REMOVAL".
1	Spark plug cap	1	
2	Air shroud	2	
3	Cylinder head cover	1	
4	Spark plug	1	
5	Cylinder head	1	
6	Cylinder head gasket	1	
7	Cylinder	1	
8	Piston pin clip	2	
9	Piston pin	1	



Order	Job/Part	Q'ty	Remarks
10	Bearing	1	
11	Piston	1	
12	Piston ring set	1	
13	Cylinder gasket	1	
			For installation, reverse the removal procedure.



EAS00253

REMOVING THE CYLINDER AND PISTON

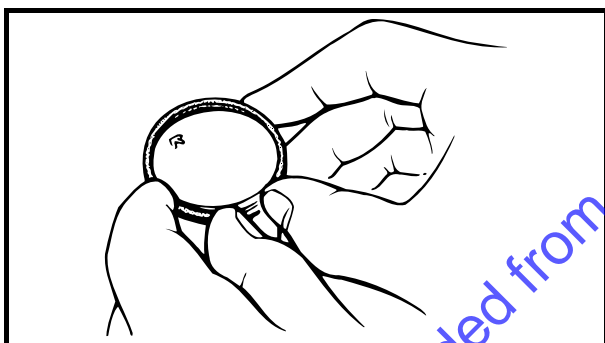
1. Remove:
 - piston pin clip ①
 - piston pin ②
 - piston ③

CAUTION:

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

NOTE:

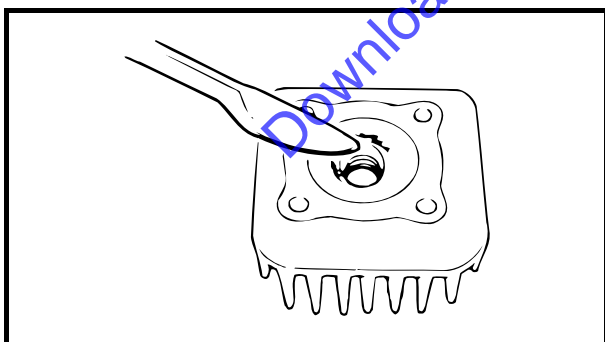
Before removing the piston pin clip, cover the crankcase opening with a clean rag to prevent the piston pin clip from falling into the crankcase.



2. Remove:
 - piston ring

NOTE:

When removing a piston ring, open the end gap with your fingers and lift the other side of the ring over the piston crown.



EAS00227

CHECKING THE CYLINDER HEAD

1. Eliminate:
 - combustion chamber carbon deposits (with a rounded scraper)

NOTE:

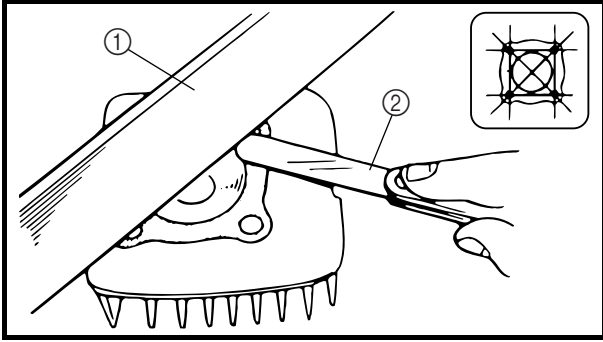
Do not use a sharp instrument to avoid damaging or scratching:

- spark plug bore threads

2. Check:
 - cylinder head
Damage/scratches → Replace.
3. Measure:
 - cylinder head warpage
Out of specification → Resurface the cylinder head.



**Maximum cylinder head warpage
0.05 mm (0.002 in)**



- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- a. Place a straightedge ① and a thickness gauge ② across the cylinder head.
- b. Measure the warpage.
- c. If the limit is exceeded, resurface the cylinder head as follows.
- d. Place a 400 ~ 600 grit wet sandpaper on the surface plate and resurface the cylinder head using a figure-eight sanding pattern.

NOTE: _____
 To ensure an even surface, rotate the cylinder head several times.



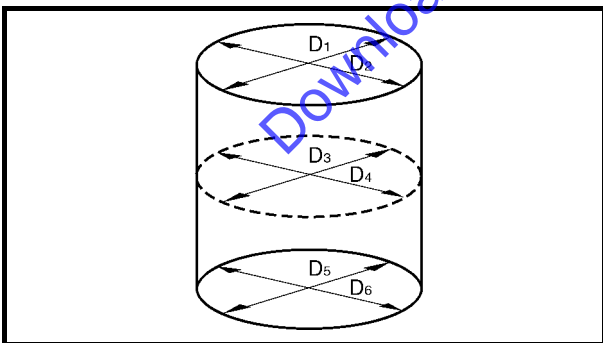
EAS00255

CHECKING THE CYLINDER AND PISTON

- 1. Check:
 - piston wall
 - cylinder wall
 Vertical scratches → Rebore or replace the cylinder, and replace the piston and piston rings as a set.
- 2. Measure:
 - piston-to-cylinder clearance

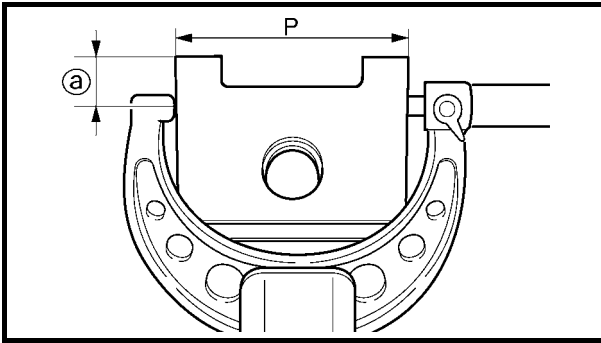
- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- a. Measure cylinder bore "C" with the cylinder bore gauge.

NOTE: _____
 Measure cylinder bore "C" by taking side-to-side and front-to-back measurements of the cylinder. Then, find the average of the measurements.



Cylinder bore "C"	39.993 ~ 40.012 mm (1.5745 ~ 1.5753 in)
Max. taper "T"	0.05 mm (0.002 in)
Out-of-round "R"	0.05 mm (0.002 in)

"C" = maximum of D1 ~ D6
"T" = maximum of D1 or D2 – maximum of D5 or D6
"R" = maximum of D1, D3 or D5 – minimum of D2, D4 or D6




- b. If out of specification, rebores or replace the cylinder, and replace the piston and piston rings as a set.
- c. Measure piston skirt diameter "P" with the micrometer.
- Ⓐ 5 mm (0.20 in) from the bottom edge of the piston

	Piston size "P"
Standard	39.952 ~ 39.969 mm (1.5729 ~ 1.5736 in)

- d. If out of specification, replace the piston and piston rings as a set.
- e. Calculate the piston-to-cylinder clearance with the following formula.

$$\text{Piston-to-cylinder clearance} = \text{Cylinder bore "C"} - \text{Piston skirt diameter "P"}$$

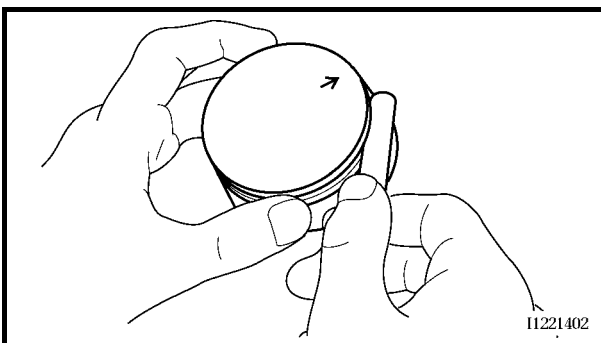


Piston-to-cylinder clearance
0.036 ~ 0.048 mm
(0.0014 ~ 0.0019 in)
<Limit>: 0.1 mm (0.0039 in)

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



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EAS00263

CHECKING THE PISTON RINGS

1. Measure:
 - piston ring side clearance
 Out of specification → Replace the piston and piston rings as a set.

NOTE: _____
 Before measuring the piston ring side clearance, eliminate any carbon deposits from the piston ring grooves and piston rings.



Piston ring side clearance

Top ring

0.03 ~ 0.05 mm

(0.0012 ~ 0.0020 in)

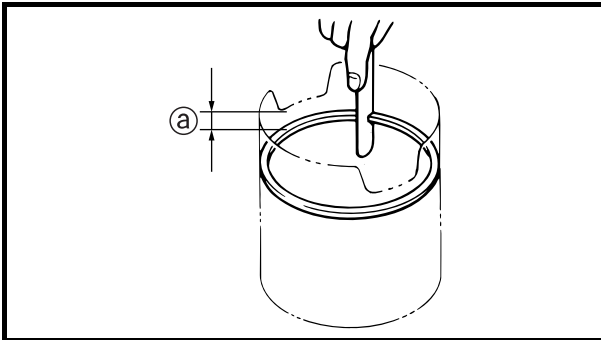
<Limit>: 0.10 mm (0.0039 in)

2nd ring

0.03 ~ 0.05 mm

(0.0012 ~ 0.0020 in)

<Limit>: 0.10 mm (0.0039 in)



2. Install:

- piston ring (into the cylinder)

NOTE:

Level the piston ring in the cylinder with the piston crown.

@ 10 mm (0.39 in)

3. Measure:

- piston ring end gap

Out of specification → Replace the piston ring.

NOTE:

The oil ring expander spacer's end gap cannot be measured. If the oil ring rail's gap is excessive, replace all three piston rings.



Piston ring end gap

Top ring

0.15 ~ 0.35 mm (0.006 ~ 0.014 in)

<Limit>: 0.70 mm (0.028 in)

2nd ring

0.15 ~ 0.35 mm (0.006 ~ 0.014 in)

<Limit>: 0.70 mm (0.028 in)

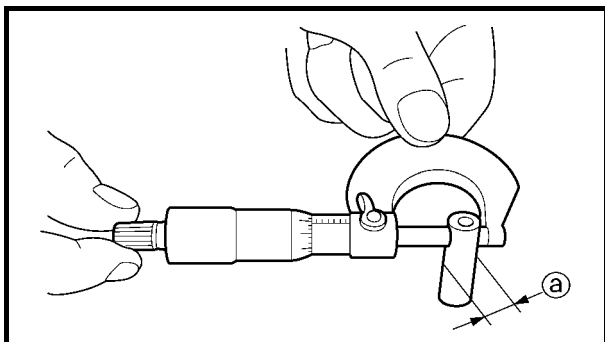
EAS00265

CHECKING THE PISTON PIN

1. Check:

- piston pin

Blue discoloration/grooves → Replace the piston pin and then check the lubrication system.

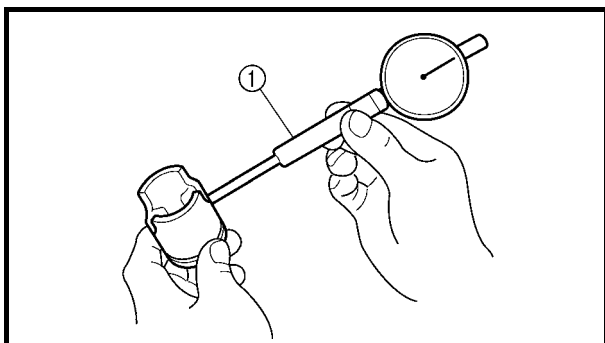


2. Measure:

- piston pin outside diameter (a)
Out of specification → Replace the piston pin.



Piston pin outside diameter
 9.996 ~ 10.000 mm
 (0.3935 ~ 0.3937 in)
 <Limit>: 9.976 mm (0.3928 in)



3. Measure:

- piston pin bore diameter (in the piston) (1)
Out of specification → Replace the piston pin.



Piston pin bore diameter (in the piston)
 10.004 ~ 10.015 mm
 (0.3939 ~ 0.3943 in)
 <Limit>: 10.045 mm (0.3955 in)

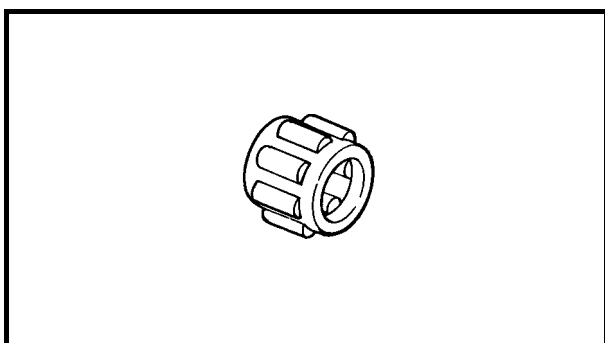
4. Calculate:

- piston-pin-to-piston-pin-bore clearance
Out of specification → Replace the piston pin and piston as a set.

Piston-pin-to-piston-pin-bore clearance =
 Piston pin bore diameter –
 Piston pin outside diameter (a)



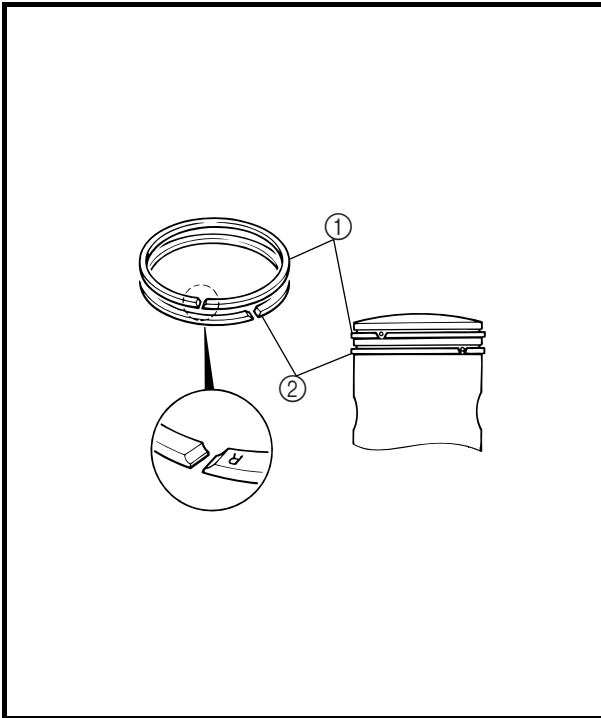
Piston-pin-to-piston clearance
 0.004 ~ 0.019 mm
 (0.00016 ~ 0.00075 in)
 <Limit>: 0.069 mm (0.0027 in)



5. Check:

- bearing
Damage/pitting → Replace.

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EAS00267

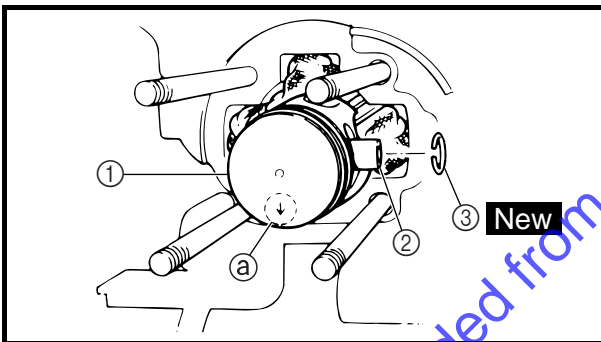
INSTALLING THE PISTON AND CYLINDER

1. Install:

- top ring ①
- 2nd ring ②

NOTE:

- Be sure to install the piston rings so that the manufacturer's marks or numbers face up.
- Before installing the cylinder, align the piston ring end gaps to the respective knock pins as shown.



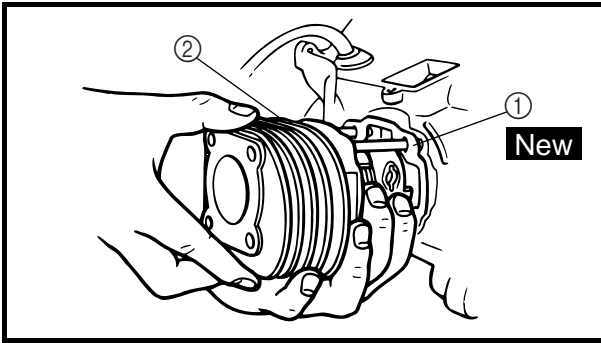
2. Install:

- bearing
- piston ①
- piston pin ②
- piston pin clip ③ **New**

NOTE:

- Lubricate the piston pin with engine oil.
- Make sure the arrow mark @ on the piston points towards the exhaust side of the cylinder.
- Before installing the piston pin clip, cover the crankcase opening with a clean rag to prevent the clip from falling into the crankcase.

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3. Install:
 - cylinder gasket ① **New**
4. Lubricate:
 - piston
 - piston rings
 - cylinder
(with the recommended lubricant)



Recommended lubricant
Yamalube 2-cycle oil or 2-stroke engine oil

5. Install:
 - cylinder ②

NOTE: _____
While compressing the piston rings with one hand, install the cylinder with the other hand.

- cylinder head gasket
- cylinder head



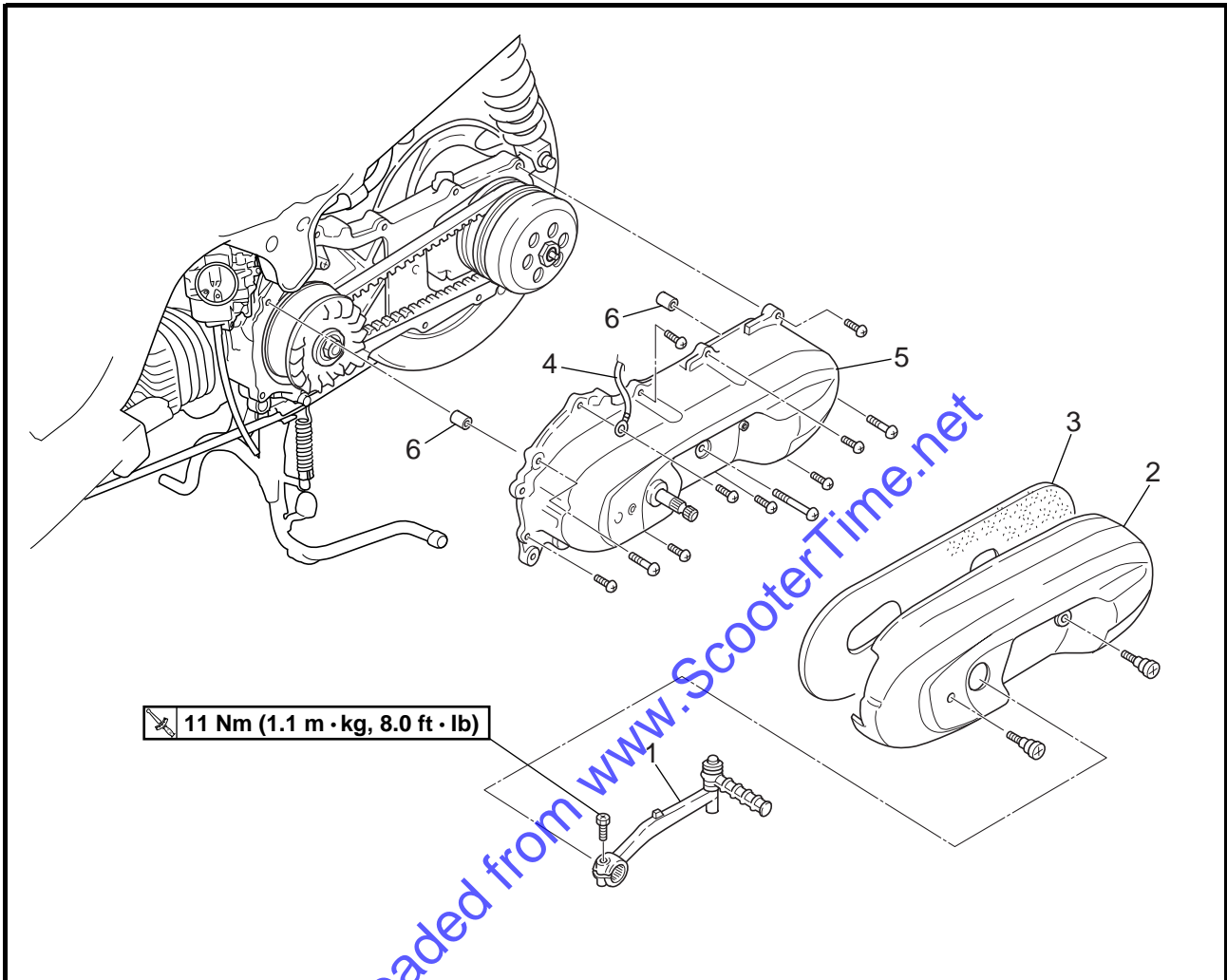
Cylinder nut
14 Nm (1.4 m · kg, 10 ft · lb)

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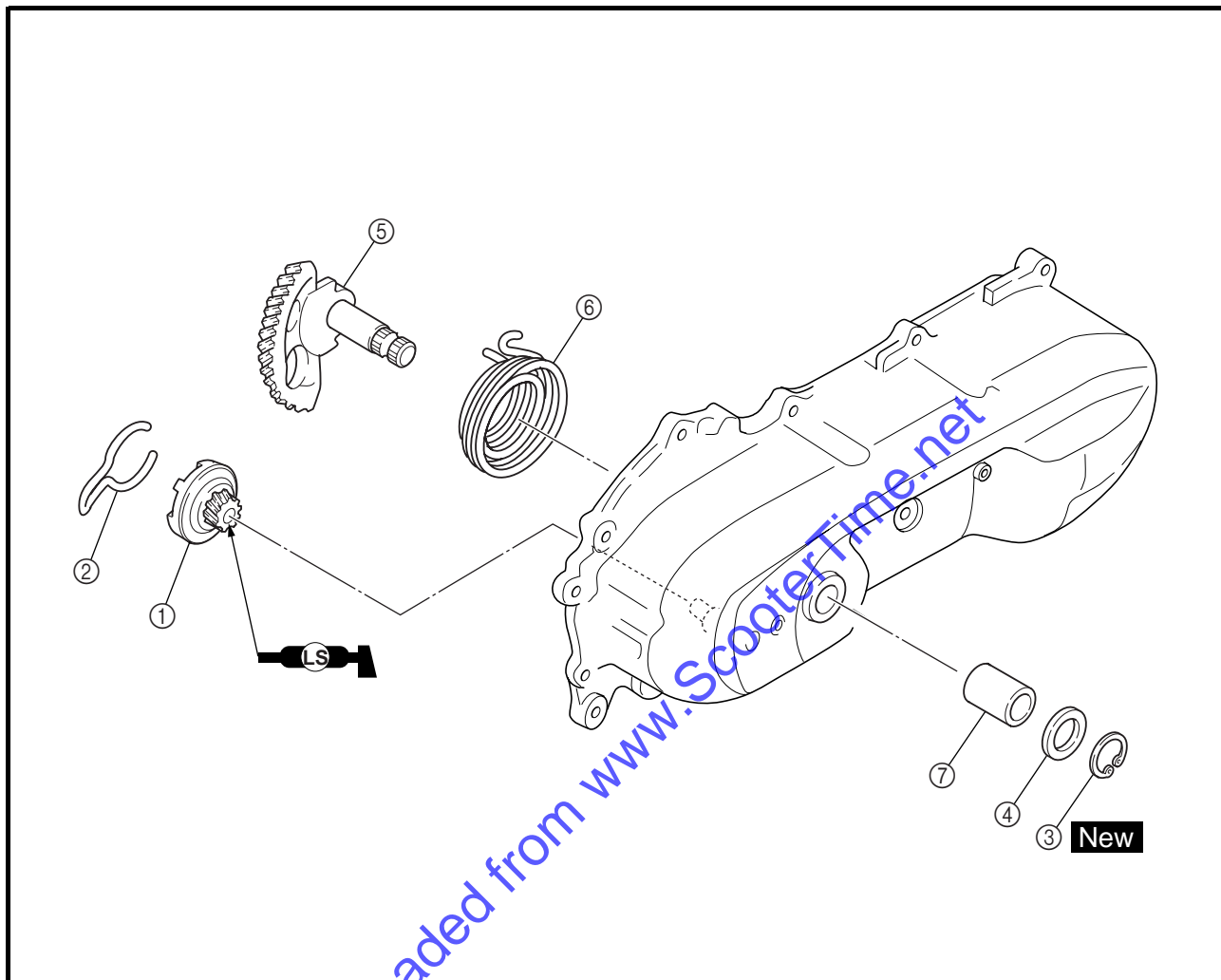


EAS00338

**KICKSTARTER
SHEAVES COVER**



Order	Job/Part	Q'ty	Remarks
	Removing the sheave cover		Remove the parts in the order listed.
	Air filter case assembly		Refer to "CARBURETOR" in chapter 6.
	Transmission oil		Drain.
1	Kickstarter crank	1	
2	Cover	1	
3	Damper	1	
4	Ground lead	1	
5	Sheave cover	1	
6	Dowel pin	2	
			For installation, reverse the removal procedure.



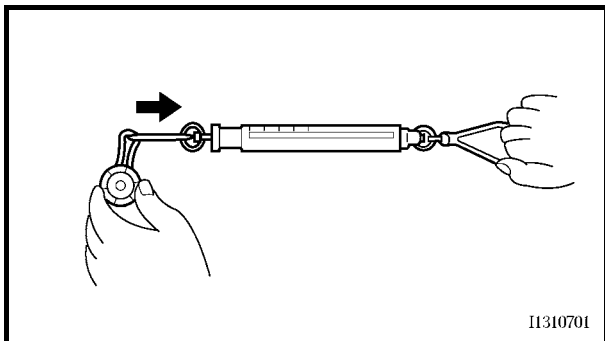
Order	Job/Part	Q'ty	Remarks
	Disassembling the kickstarter shaft		Remove the parts in the order listed.
①	Kickstarter pinion gear	1	
②	Kickstarter pinion gear clip	1	
③	Circlip	1	
④	Washer	1	
⑤	Kickstarter shaft	1	
⑥	Kickstarter spring	1	
⑦	Spacer	1	
			For assembly, reverse the disassembly procedure.



EAS00339

CHECKING THE KICKSTARTER

1. Check:
 - kickstarter shaft
 - kickstarter pinion gear
Damage/wear → Replace.
2. Check:
 - kickstarter spring
Damage/wear → Replace.



3. Measure:
 - kickstarter pinion gear clip force
(with the spring gauge)
Out of specification → Replace the kick-
starter pinion gear clip



Kickstarter pinion gear clip force
0.15 ~ 0.25 kg (0.34 ~ 0.56 lb)

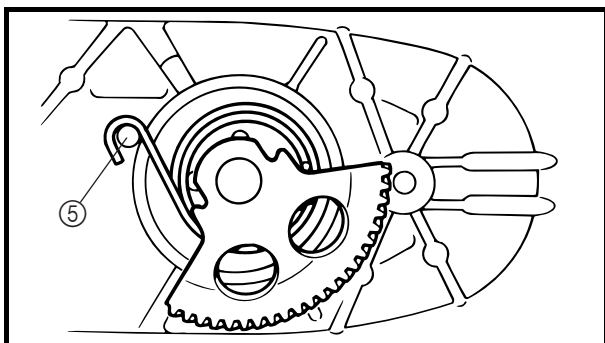
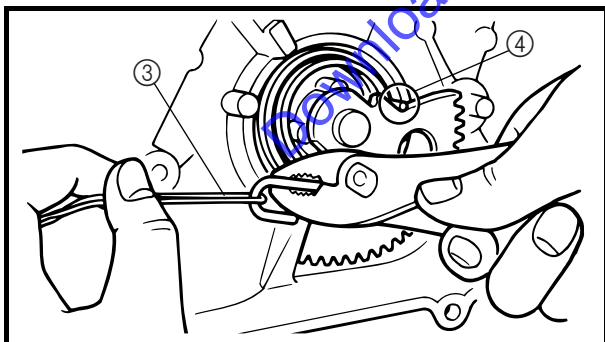
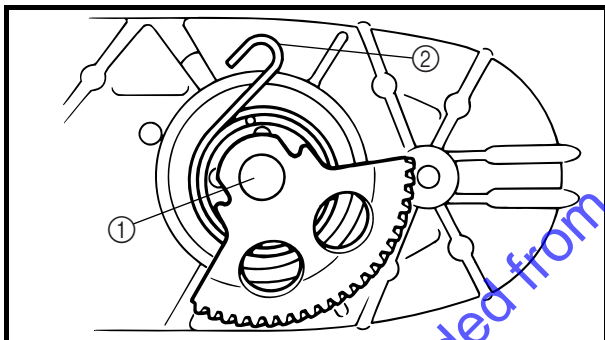
EAS00340

INSTALLING THE KICKSTARTER

1. Install:
 - kickstarter shaft ①
 - kickstarter spring ②
 - spacer
 - washer
 - circlip

NOTE:

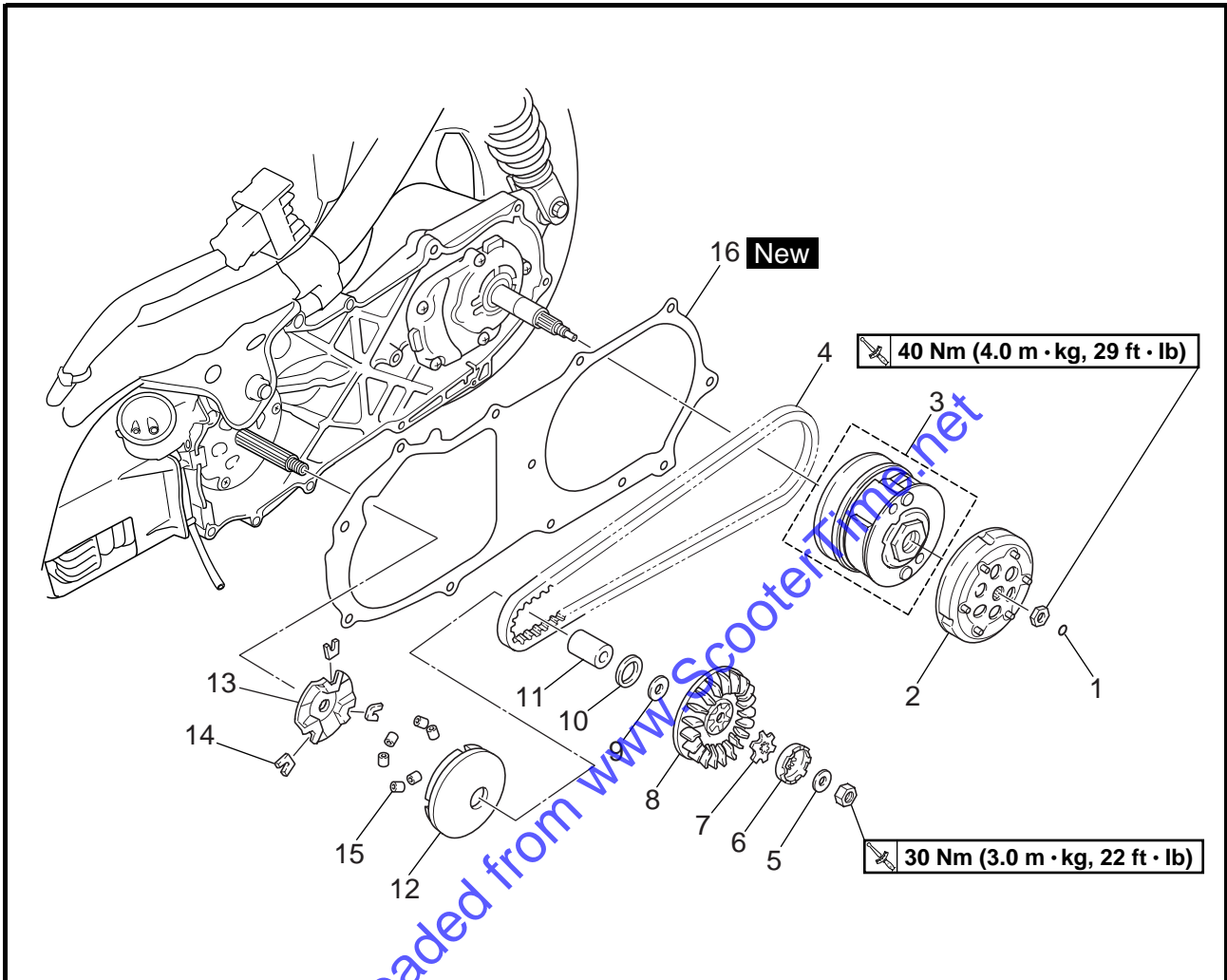
- Install the wire ③ onto the kickstarter spring.
- Install the kickstarter spring straight end on the kickstarter shaft notch ④ and hook the spring hooked end on the projection ⑤ as shown.



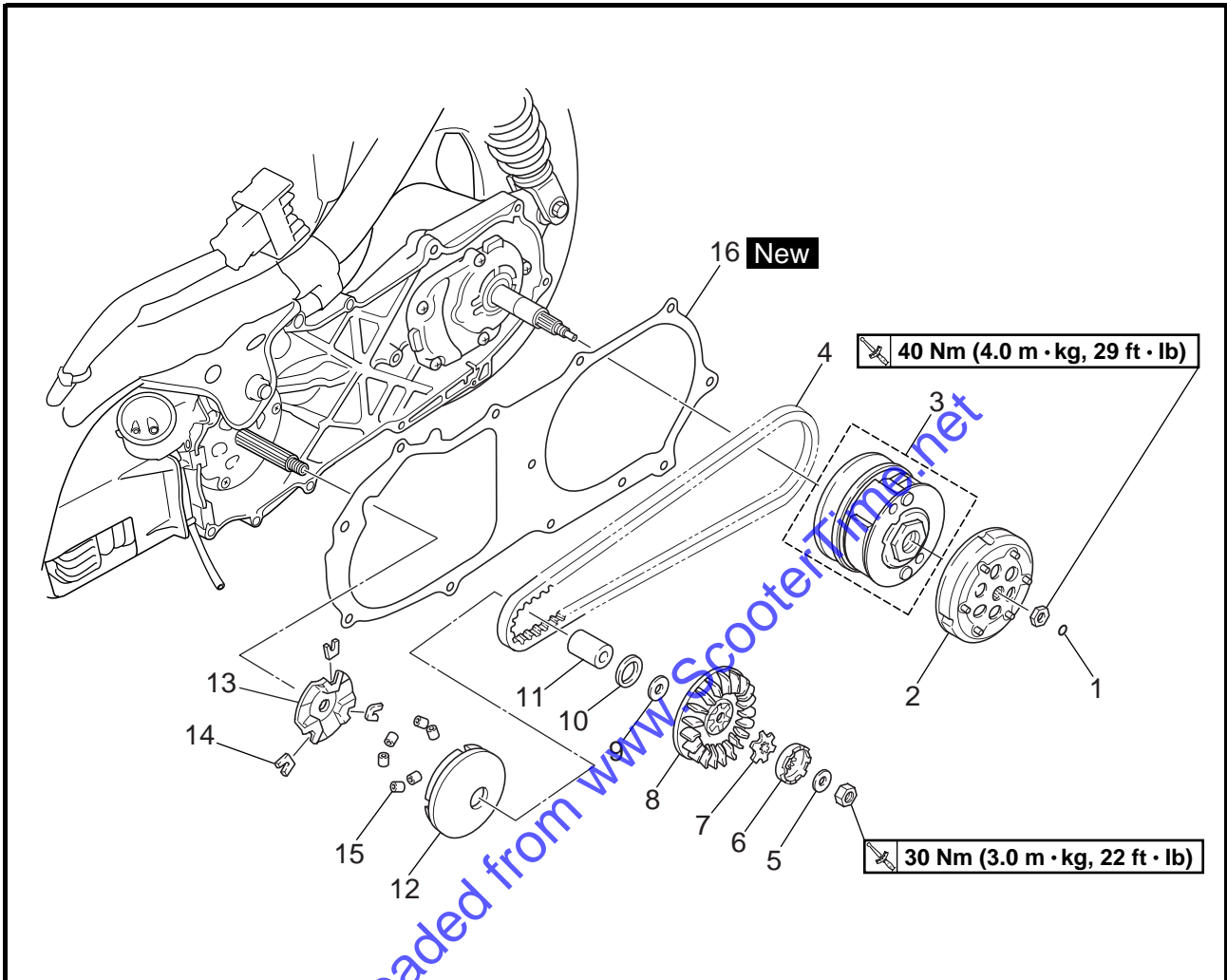


EAS00316

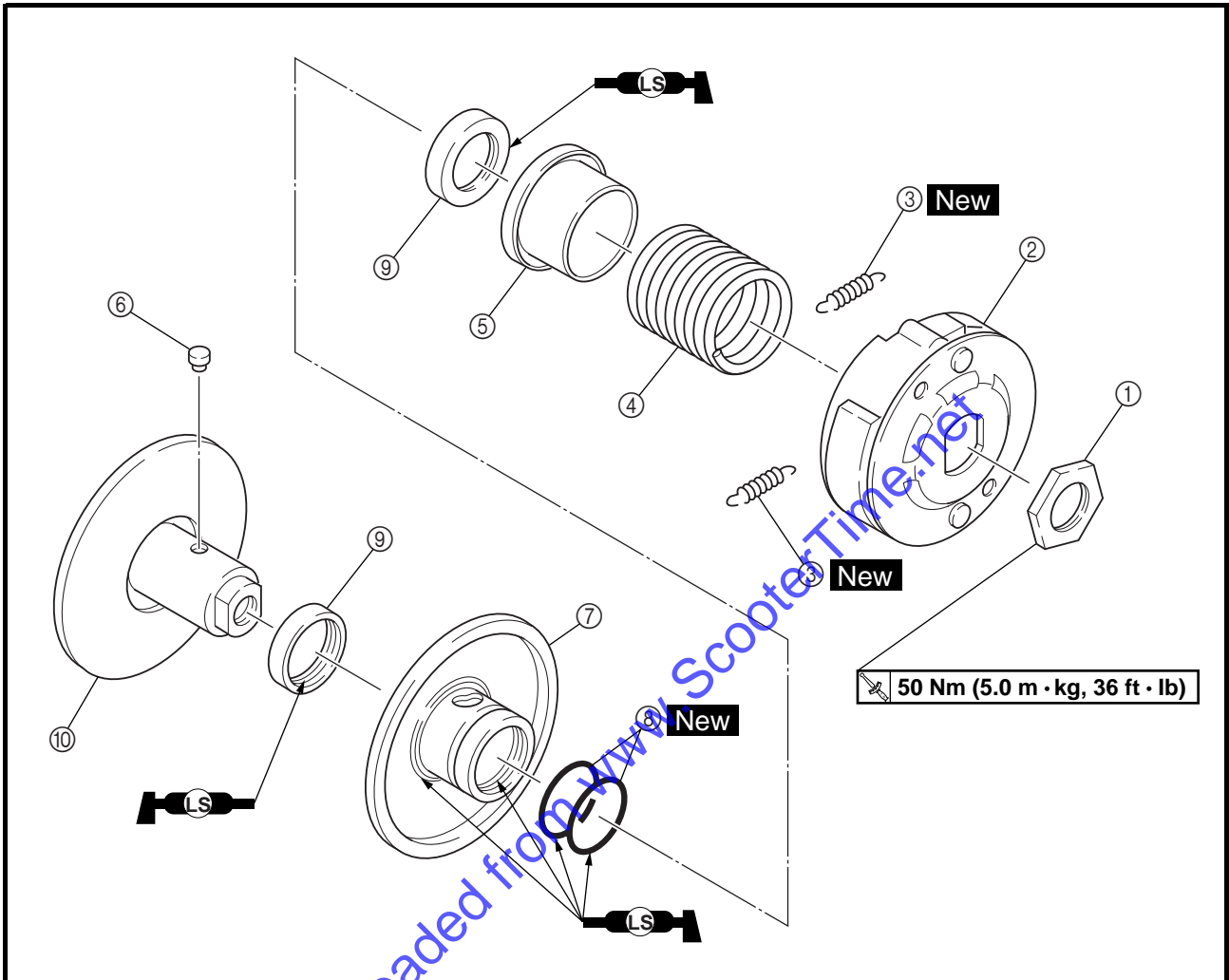
BELT DRIVE



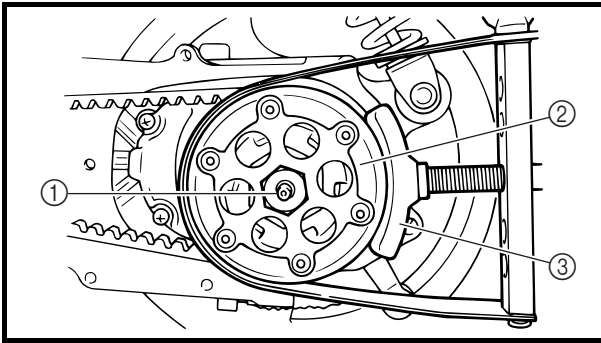
Order	Job/Part	Q'ty	Remarks
	Removing the V-belt, primary and secondary pulley		Remove the parts in the order listed.
	Sheaves cover		Refer to "KICK STARTER".
	Air shroud/fan		Refer to "GENERATOR AND AUTOLUBE PUMP".
1	O-ring	1	
2	Clutch housing	1	
3	Secondary pulley	1	
4	V-belt	1	
5	Conical spring washer	1	
6	Kickstarter one-way clutch	1	
7	Claw washer	1	
8	Primary fixed sheave	1	
9	Washer	1	
10	Spacer	1	



Order	Job/Part	Q'ty	Remarks
11	Collar	1	
12	Primary sliding sheave	1	
13	Slider	1	
14	Cam	1	
15	Primary pulley weight	6	
16	Gasket	1	
			For installation, reverse the removal procedure.



Order	Job/Part	Q'ty	Remarks
	Disassembling the secondary pulley		Remove the parts in the order listed.
①	Clutch carrier nut	1	
②	Clutch carrier	1	
③	Clutch spring	2	
④	Spring	1	
⑤	Spring seat	1	
⑥	Pin	2	
⑦	Secondary sliding sheave	1	
⑧	O-ring	2	
⑨	Oil seal	1	
⑩	Secondary fixed sheave	1	
			For assembly, reverse the disassembly procedure.



EAS00318

REMOVING THE SECONDARY PULLEY AND V-BELT

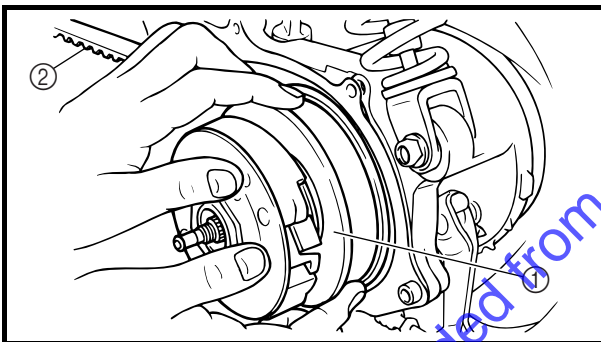
1. Remove:
 - air shroud
 - fan
 Refer to "GENERATOR AND AUTOLUBE PUMP".
2. Remove:
 - clutch housing nut ①
 - clutch housing ②

NOTE:

While holding the clutch housing with the sheave holder ③, loosen the clutch housing nut.



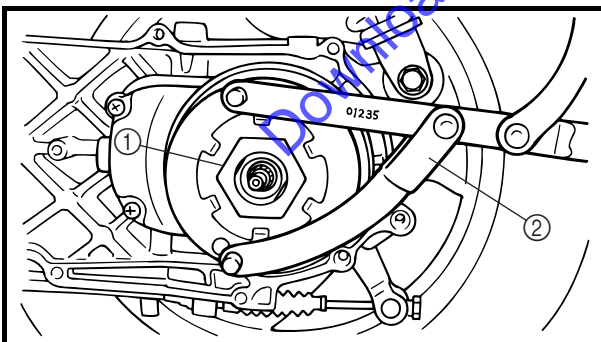
Sheave holder
YU-01701



3. Remove:
 - secondary pulley ①
 - V-belt ②

NOTE:

Pull the secondary sliding sheave out as shown, remove the V-belt from the primary pulley, and then remove the secondary pulley ① along with the V-belt ②.



4. Loosen:
 - clutch carrier nut ①

CAUTION:

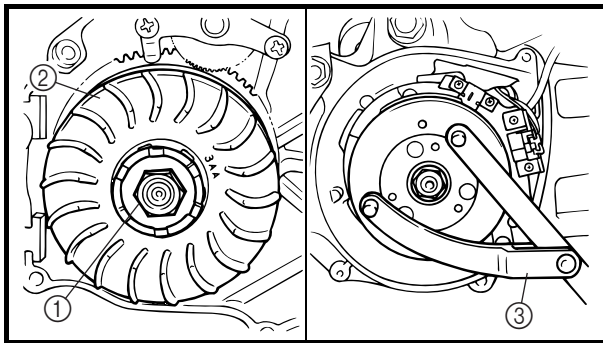
Do not remove the clutch carrier nut at this stage.

NOTE:

While holding the clutch carrier with the rotor holding tool ②, loosen the clutch carrier nut one full turn with the locknut wrench.



Rotor holding tool
YU-01235
Locknut wrench
90890-01348



EAS00317

REMOVING THE PRIMARY SHEAVE

1. Remove:

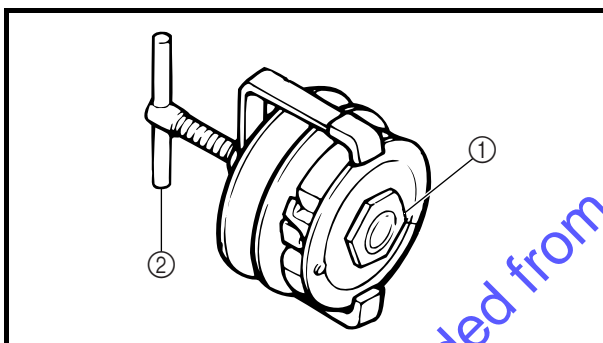
- primary sheave nut ①
- conical spring washer
- kickstarter one-way clutch
- claw washer
- primary fixed sheave ②

NOTE:

While holding the generator rotor with the rotor holding tool ③, loosen the primary sheave nut.



Rotor holding tool
YU-01235



EAS00319

DISASSEMBLING THE SECONDARY PULLEY

1. Remove:

- clutch carrier nut ①

NOTE:

Install the clutch spring holder ② onto the secondary pulley as shown. Then, compress the spring, and remove the clutch carrier nut ①.



Clutch spring holder
YS-28891

EAS00291

CHECKING THE CLUTCH SHOES

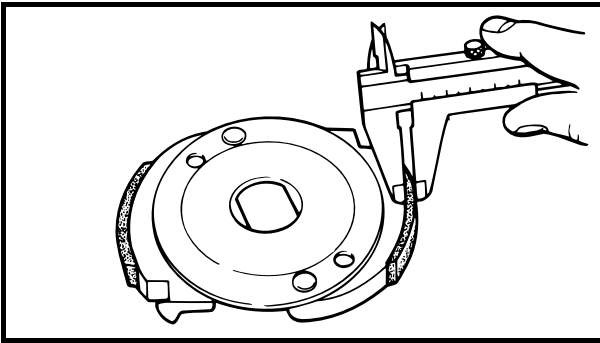
The following procedure applies to all of the clutch shoes.

1. Check:

- clutch shoe
 - Damage/wear → Replace the clutch shoes as a set.
 - Glazed areas → Sand with course sandpaper.

NOTE:

After sanding the glazed areas, clean the clutch with a cloth.

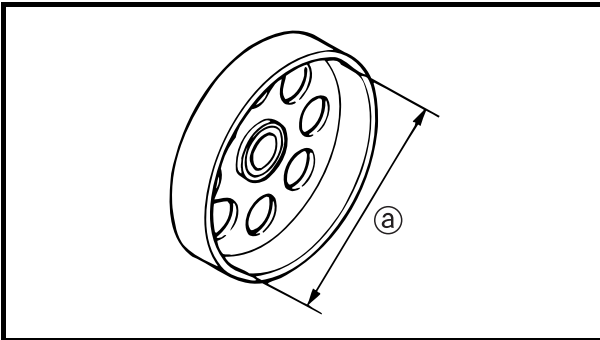


2. Measure:

- clutch shoe thickness
Out of specification → Replace the clutch shoes as a set.



Clutch shoe thickness
4.0 mm (0.157 in)
<Limit>: 1.0 mm (0.039 in)

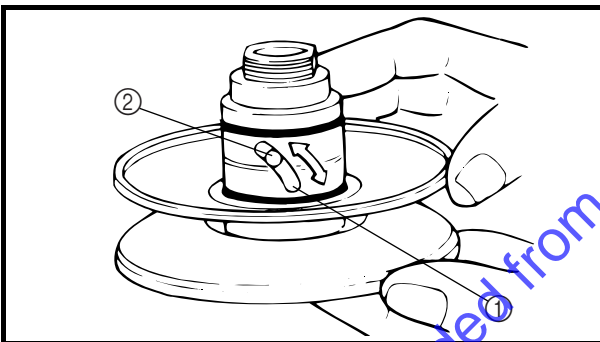


3. Check:

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



Clutch housing inside diameter
105.0 mm (4.13 in)
<Limit> 105.5 mm (4.15 in)



EAS00322

CHECKING THE SECONDARY PULLEY

1. Check:

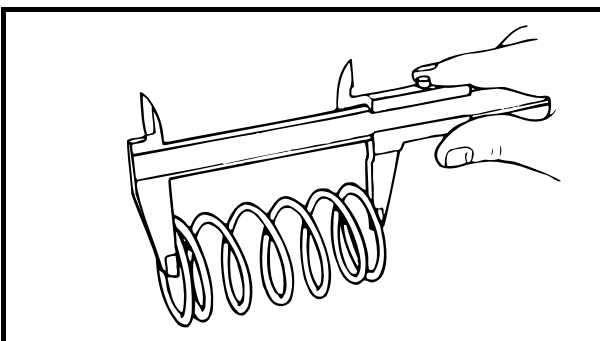
- secondary fixed sheave
- secondary sliding sheave
Cracks/damage/wear → Replace the secondary fixed and sliding sheaves as a set.

2. Check:

- guide pin groove (1)
Damage/wear → Replace the secondary fixed and sliding sheaves as a set.

3. Check:

- guide pin (2)
Damage/wear → Replace the secondary fixed and sliding sheaves as a set.

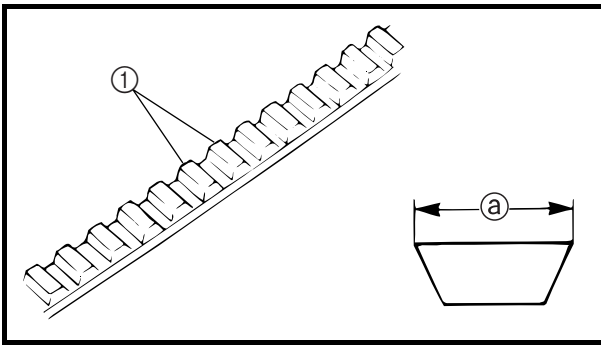


4. Check:

- spring free length
Out of specification → Replace the spring



Spring free length
95.4 mm (3.76 in)
<Limit>: 90.7 mm (3.57 in)



EAS00320

CHECKING THE V-BELT

1. Check:

- V-belt ①
Cracks/damage/wear → Replace.
Grease/oil → Check the primary and secondary pulleys.

2. Measure:

- V-belt width ②
Out of specification → Replace.



V-belt width
16.6 mm (0.65 in)
<Limit>: 15.0 mm (0.59 in)

EAS00321

CHECKING THE PRIMARY PULLEY WEIGHTS

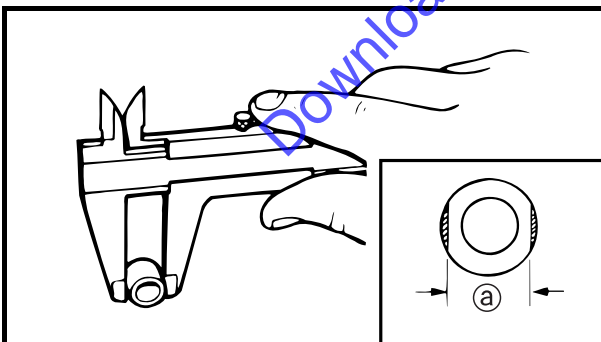
The following procedure applies to all of the primary pulley weights.

1. Check:

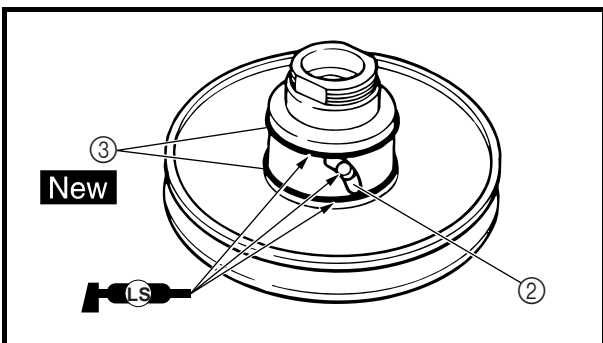
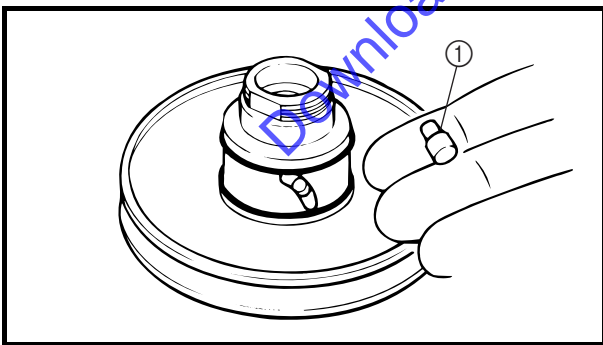
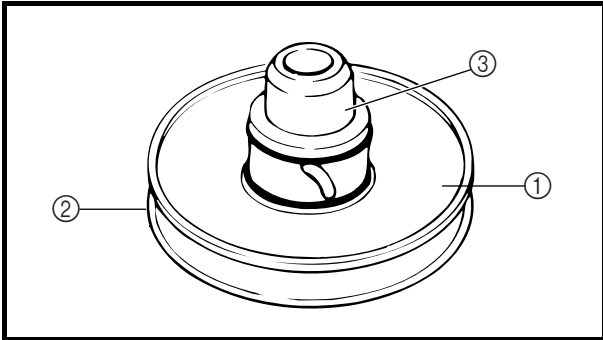
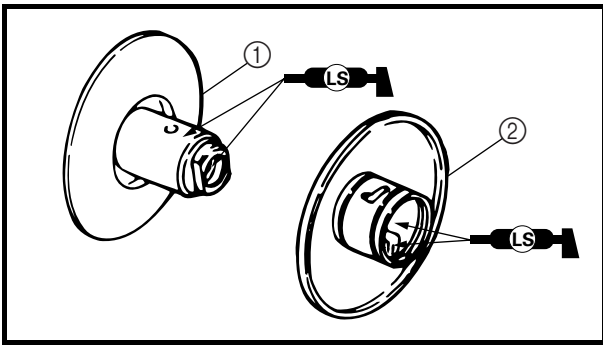
- primary pulley weight
Cracks/damage/wear → Replace.

2. Measure:

- primary pulley weight outside diameter ③
Out of specification → Replace.



Primary pulley weight outside diameter
15.0 mm (0.59 in)
<Limit>: 14.5 mm (0.57 in)



EAS00324

ASSEMBLING THE SECONDARY PULLEY

1. Lubricate:

- secondary fixed sheave's inner surface ①
- secondary sliding sheave's inner surface ②
- oil seals
(with the recommended lubricant)

	Recommended lubricant Lithium soap base grease
--	--

2. Install:

- secondary sliding sheave ①

NOTE:

Install the secondary sliding sheave onto the secondary fixed sheave ② with the oil seal guide ③.

	Oil seal guide YM-01409
--	-----------------------------------

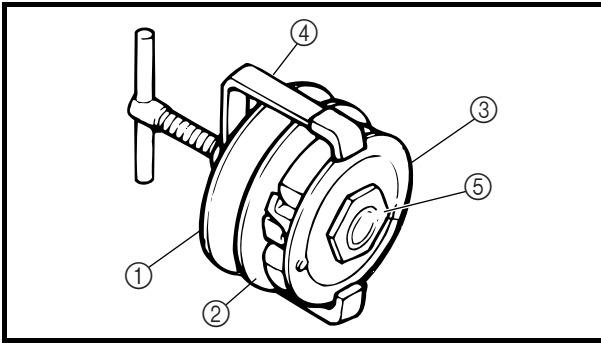
3. Install:

- guide pin ①

4. Lubricate:

- guide pin groove ②
- O-ring ③ **New**
(with the recommended lubricant)

	Recommended lubricant Lithium soap base grease
--	--



5. Install:

- secondary fixed sheave ①
- secondary sliding sheave ②
- spring
- clutch carrier ③

NOTE:

Attach the clutch spring holder ④ onto the secondary pulley as shown. Then, compress the spring, and tighten the clutch carrier nut ⑤.



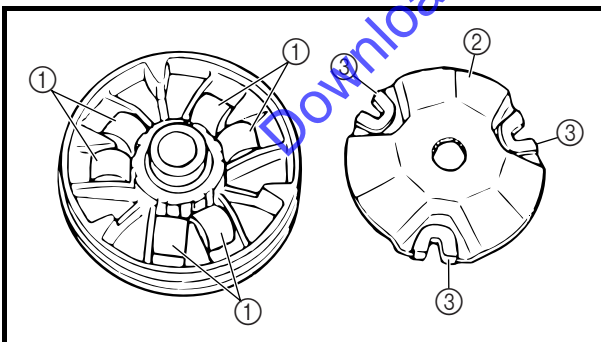
Clutch spring holder
YS-28891

EAS00323

INSTALLING THE PRIMARY PULLEY

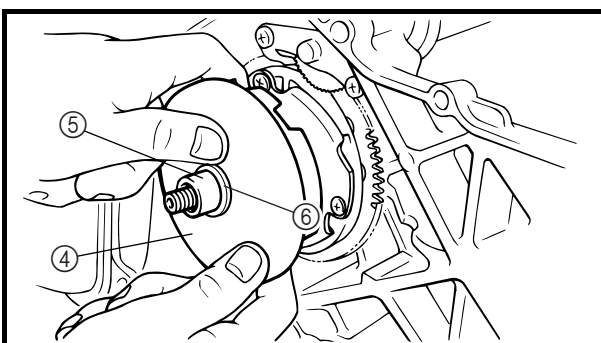
1. Clean:

- primary fixed sheave
- primary sliding sheave
- spacer
- primary pulley weights



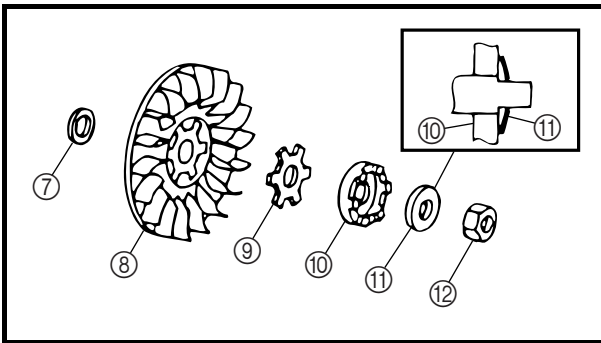
2. Install:

- primary pulley weights ①
- slider ②
- cams ③



3. Install:

- primary sliding sheave ④
- collar ⑤
- spacer ⑥



4. Install:

- washer ⑦
- primary fixed sheave ⑧
- claw washer ⑨
- kickstarter one-way clutch ⑩
- conical spring washer ⑪
- primary sheave nut ⑫

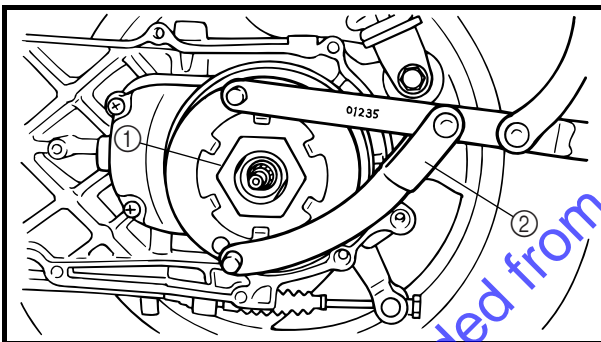
30 Nm (3.0 m · kg, 22 ft · lb)

NOTE:

- Install the conical spring washer ⑪ as shown in the illustration.
- While holding the generator rotor with the rotor holding tool, tighten the primary sheave nut.



Rotor holding tool
YU-01235



EAS00325

INSTALLING THE BELT DRIVE

1. Install:

- clutch carrier nut ①

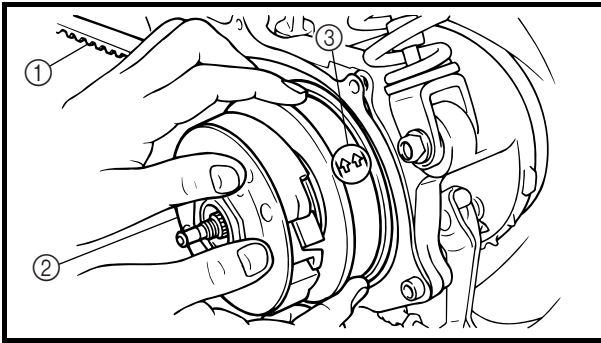
50 Nm (5.0 m · kg, 36 ft · lb)

NOTE:

While holding the clutch carrier with the rotor holding tool ②, tighten the clutch carrier nut with the locknut wrench.



Rotor holding tool
YU-01235



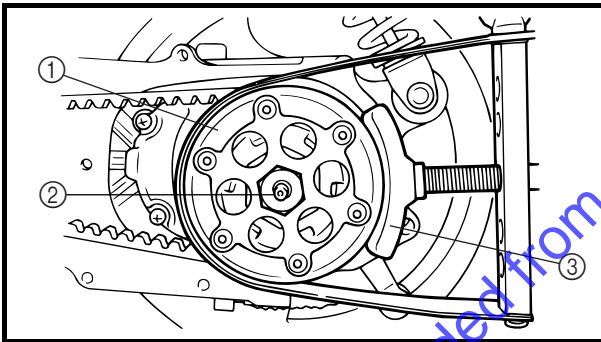
2. Install:
- V-belt ①
 - secondary pulley ②

CAUTION:

Do not allow grease to contact the V-belt, secondary pulley or clutch assembly.

NOTE:

- The V-belt must be installed, with the arrow ③ forward.
- Install the V-belt on the primary pulley, then install the secondary pulley ② along with the V-belt ①.



3. Install:
- clutch housing ①
 - clutch housing nut ②

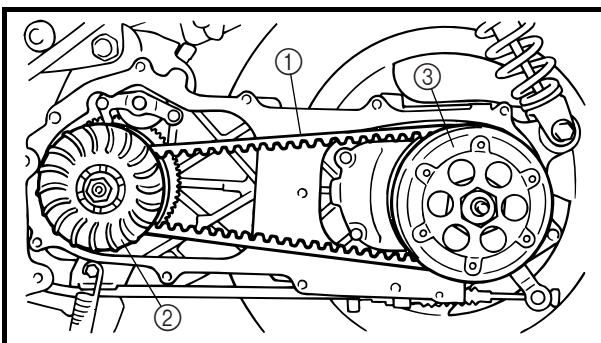
40 Nm (4.0 m · kg, 29 ft · lb)

NOTE:

Tighten the clutch housing nut while holding the clutch housing with the sheave holder ③.



**Sheave holder
YU-01701**

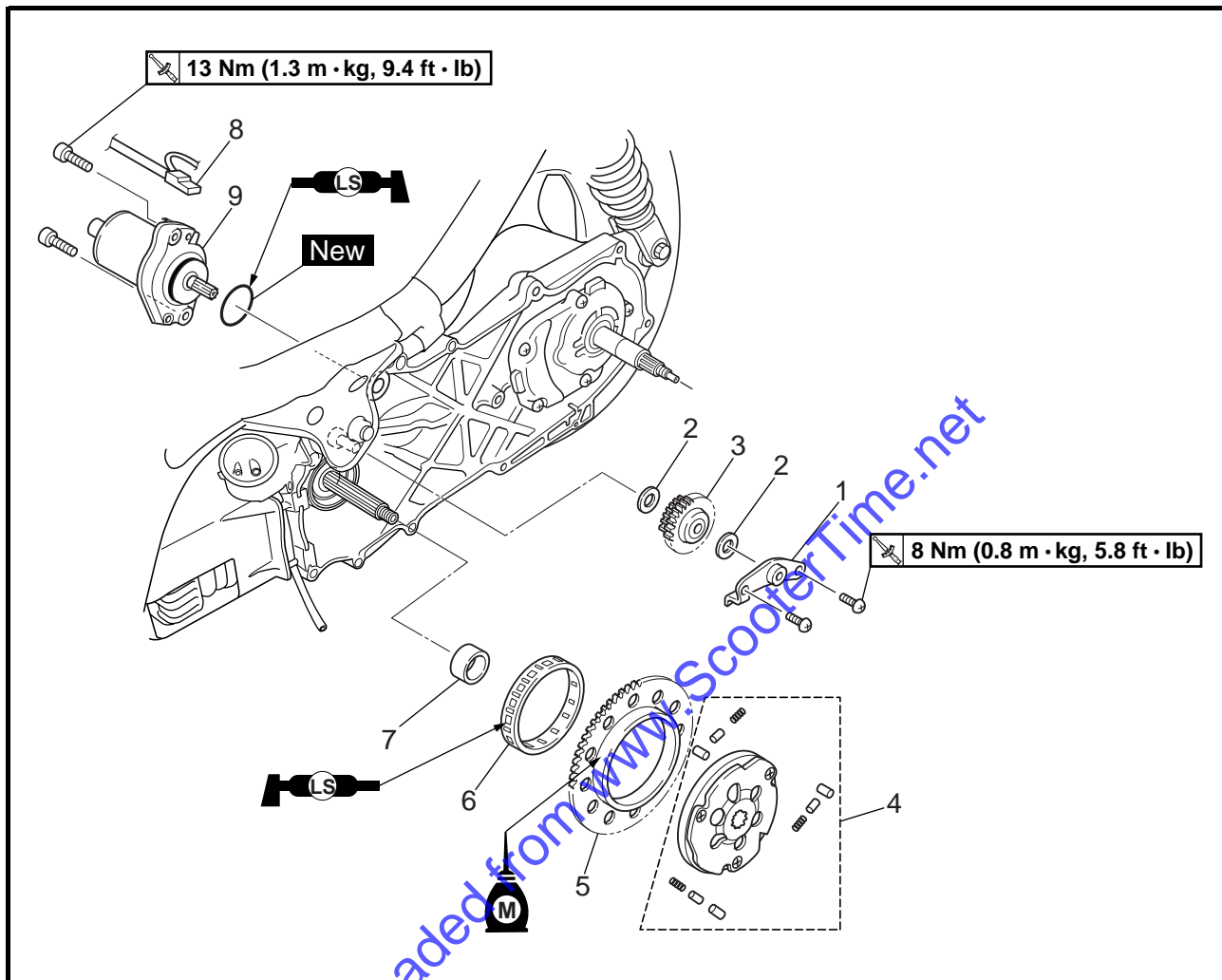


4. Position:
- V-belt ①

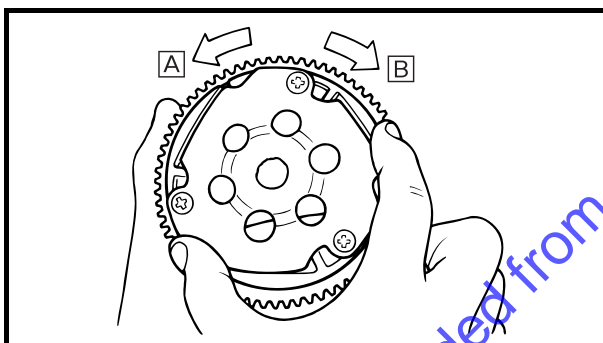
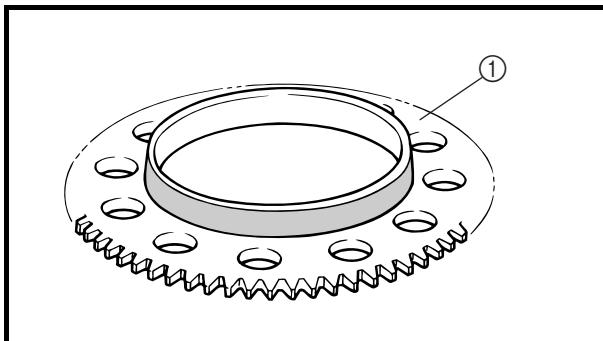
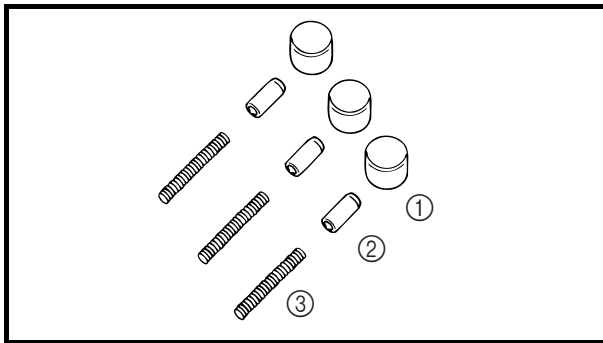
NOTE:

Position the V-belt on the primary pulley ② (when the pulley is at its widest position) and on the secondary pulley ③ (when the pulley is at its narrowest position), and make sure the V-belt is tight.

STARTER CLUTCH AND STARTER MOTOR



Order	Job/Part	Q'ty	Remarks
	Removing the starter clutch and starter motor		Remove the parts in the order listed.
	Sheaves cover		Refer to "KICKSTARTER".
	Primary sliding sheave		Refer to "BELT DRIVE"
1	Idle gear plate	1	
2	Washer	2	
3	Idle gear	1	
4	Starter clutch assembly	1	
5	Starter wheel gear	1	
6	Bearing	1	
7	Spacer	1	
8	Starter motor coupler	1	Disconnect.
9	Starter motor	1	For installation, reverse the removal procedure.



EAS00351

CHECKING THE STARTER CLUTCH

1. Check:

- starter clutch rollers ①
 - starter clutch spring caps ②
 - starter clutch springs ③
- Damage/wear → Replace.

2. Check:

- starter wheel gear ①
- Burrs/chips/roughness/wear → Replace the defective part(s).

3. Check:

- starter wheel gear contacting surface
- Damage/pitting/wear → Replace the starter wheel gear.

4. Check:

- starter clutch operation

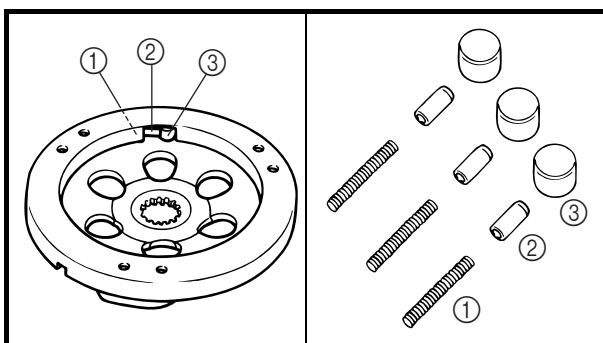
- ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- Install the starter wheel gear onto the starter clutch and hold the starter clutch.
 - When turning the starter wheel gear clockwise [A], the starter clutch and the starter wheel gear should engage, otherwise the starter clutch is faulty and must be replaced.
 - When turning the starter wheel gear counterclockwise [B], it should turn freely, otherwise the starter clutch is faulty and must be replaced.

EAS00355

INSTALLING THE STARTER CLUTCH

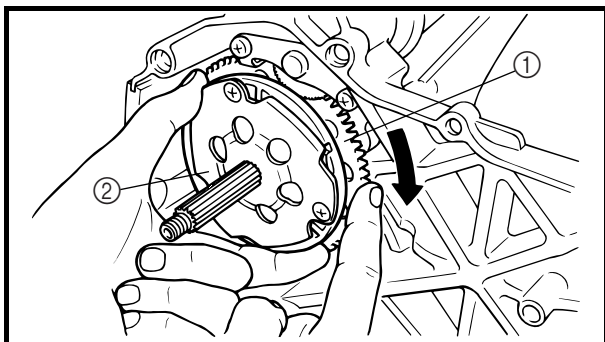
1. Install:

- starter clutch springs ①
- starter clutch spring caps ②
- starter clutch rollers ③



STARTER CLUTCH AND STARTER MOTOR

ENG



2. Install:

- starter wheel gear ①
- starter clutch assembly ②

NOTE:

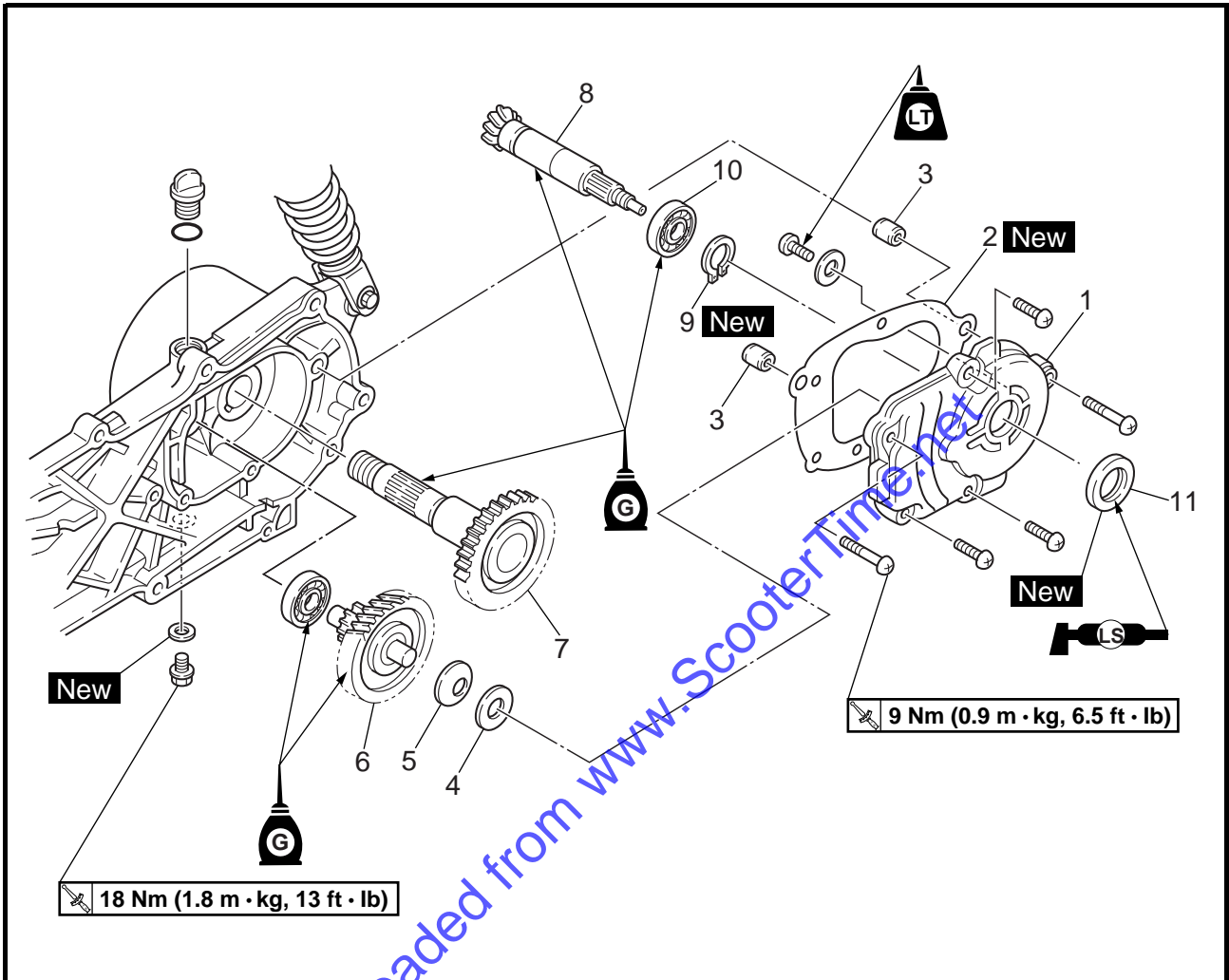
Install the starter clutch assembly ① while turning the starter wheel gear ② clockwise.

Downloaded from www.ScooterTime.net

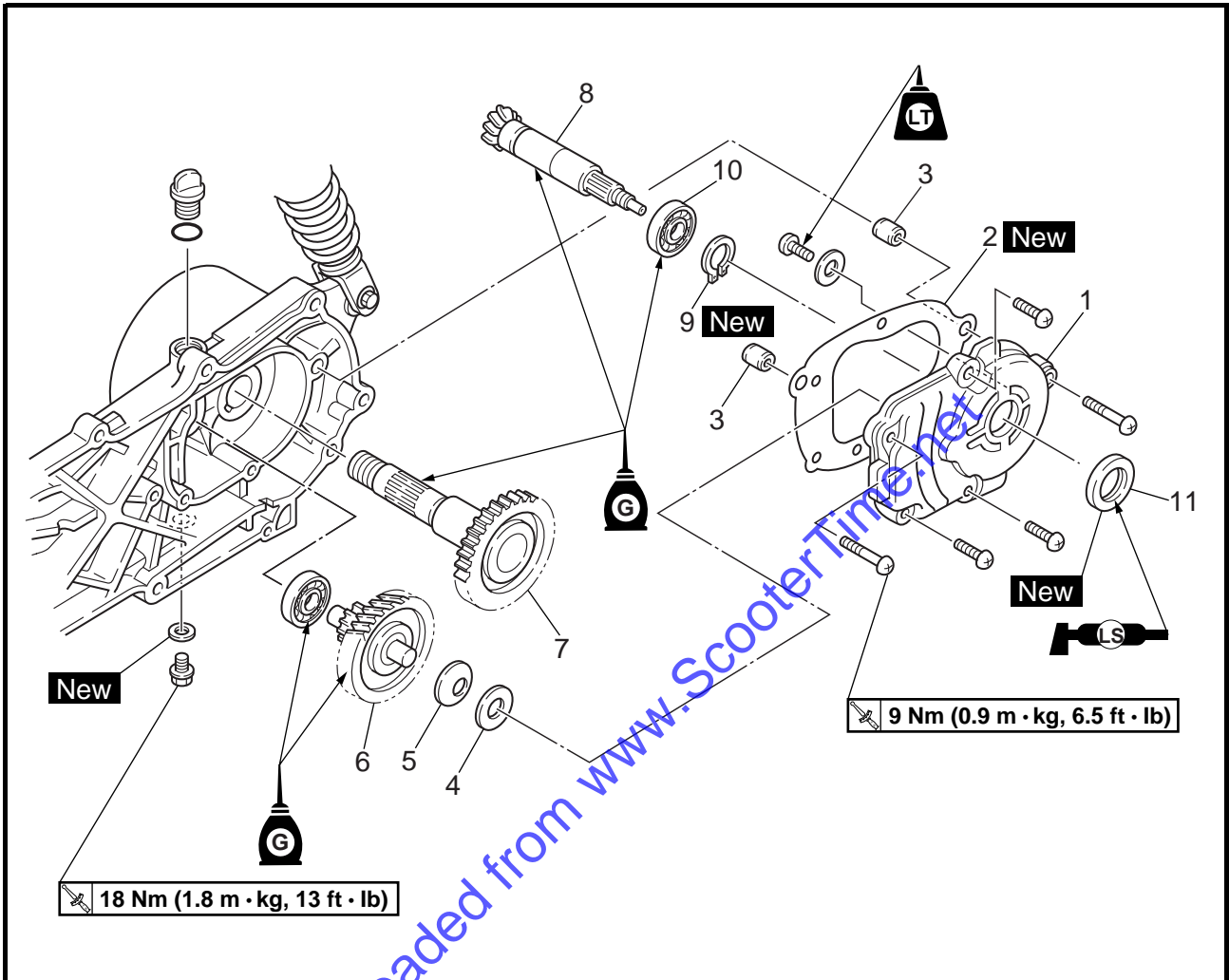


EAS00419

TRANSMISSION



Order	Job/Part	Q'ty	Remarks
	Removing the transmission		Remove the parts in the order listed.
	Transmission oil		Drain.
	Rear wheel		Refer to "REAR WHEEL AND BRAKE" in chapter 4.
	Secondary pulley		Refer to "BELT DRIVE".
1	Transmission cover	1	
2	Gasket	1	
3	Dowel pin	2	
4	Washer	1	
5	Conical spring washer	1	
6	Main axle	1	
7	Drive axle	1	
8	Secondary drive gear	1	



Order	Job/Part	Q'ty	Remarks
9	Circlip	1	For installation, reverse the removal procedure.
10	Bearing	1	
11	Oil seal	1	



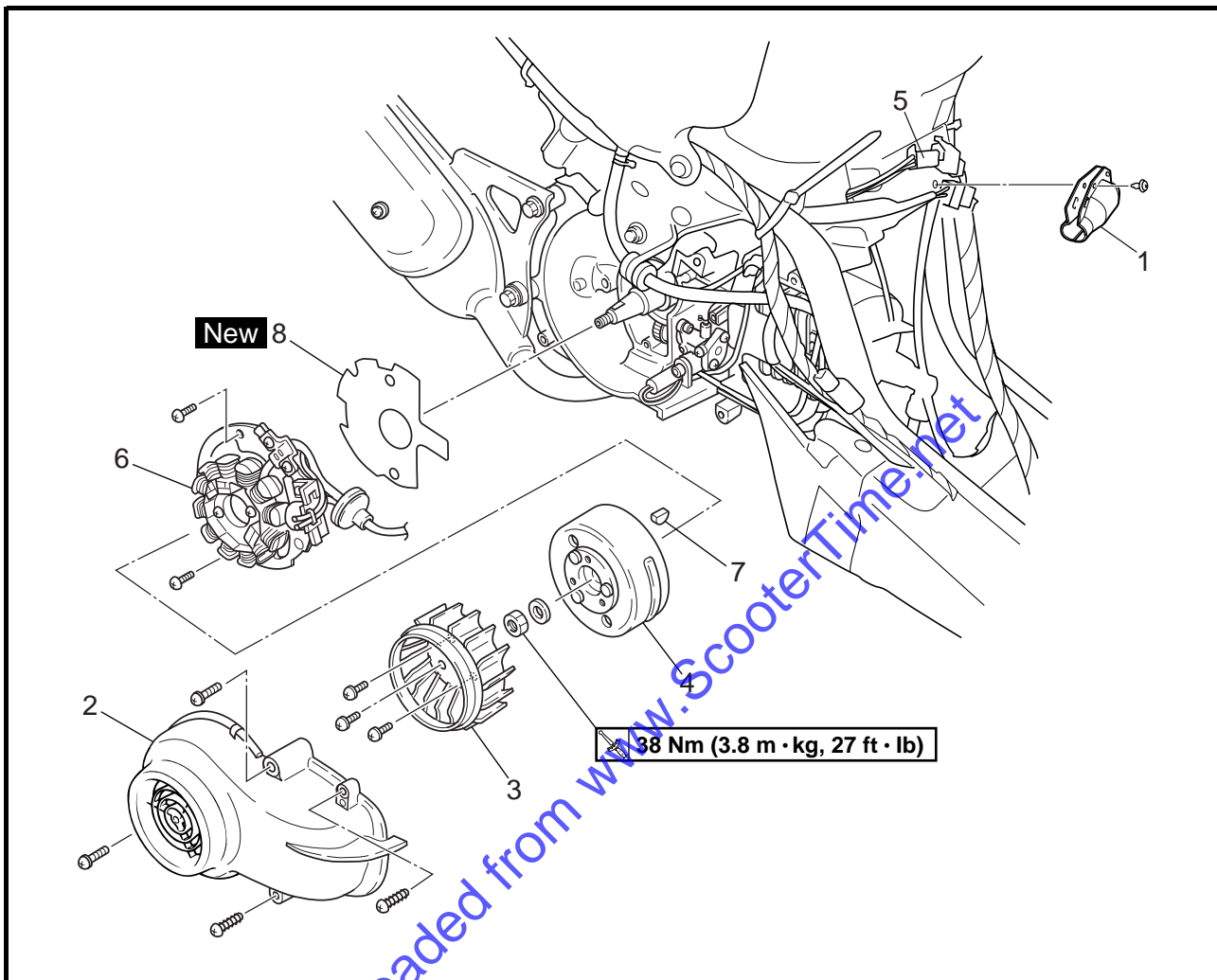
EAS00425

CHECKING THE TRANSMISSION

1. Check:
 - drive axle
 - main axle
 - secondary drive gearDamage/wear → Replace.
2. Check:
 - bearingRough movement → Replace.
3. Check:
 - secondary drive gear movementRough movement → Replace the defective part.
4. Check:
 - circlipsBends/damage/looseness → Replace.

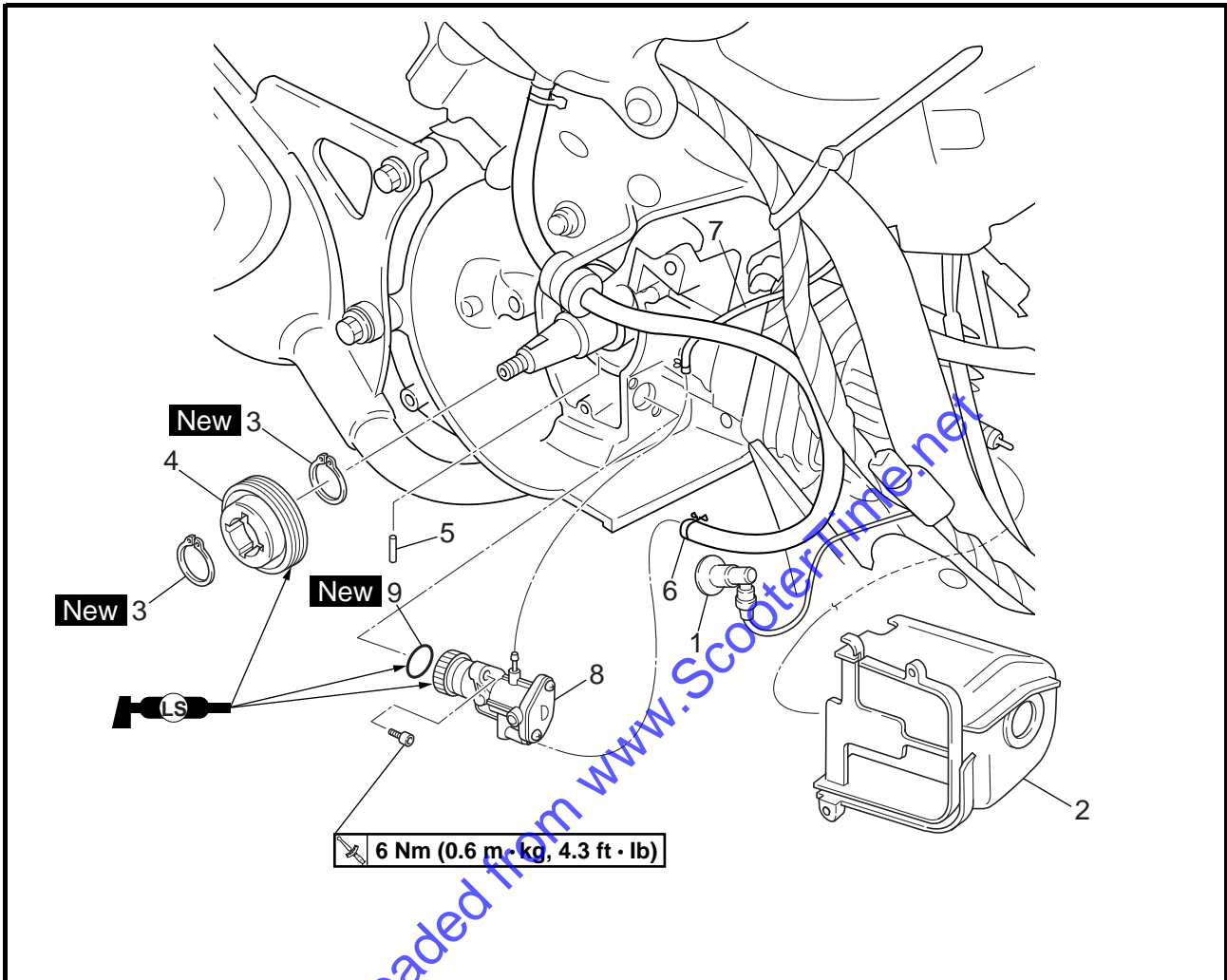
Downloaded from www.ScooterTime.net

GENERATOR AND AUTOLUBE PUMP
STATOR COIL ASSEMBLY

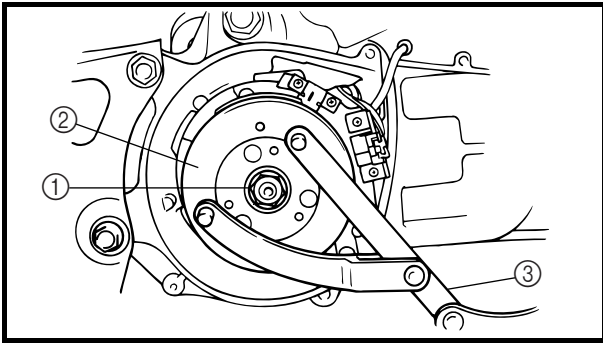


Order	Job/Part	Q'ty	Remarks
	Removing the stator coil assembly		Remove the parts in the order listed.
	Center cover, side cover (right) and footrest board		Refer to "SIDE COVERS AND FOOTREST BOARD" in chapter 3.
1	Coupler cover	1	
2	Air shroud	1	
3	Fan	1	
4	Generator rotor	1	
5	Stator coil assembly coupler	1	Disconnect.
6	Stator coil assembly	1	
7	Woodruff key	1	
8	Gasket	1	
			For installation, reverse the removal procedure.

AUTOLUBE PUMP



Order	Job/Part	Q'ty	Remarks
	Removing the autolube pump		Remove the parts in the order listed. Refer to "GENERATOR AND AUTOLUBE PUMP".
	Stator coil assembly		
1	Spark plug cap	1	
2	Cylinder head cover	1	
3	Circlip	2	
4	Pump drive gear	1	
5	Pin	1	
6	Oil hose	1	
7	Oil delivery hose	1	
8	Autolube pump	1	
9	O-ring	1	
			For installation, reverse the removal procedure.



EAS00346

REMOVING THE GENERATOR

1. Remove:

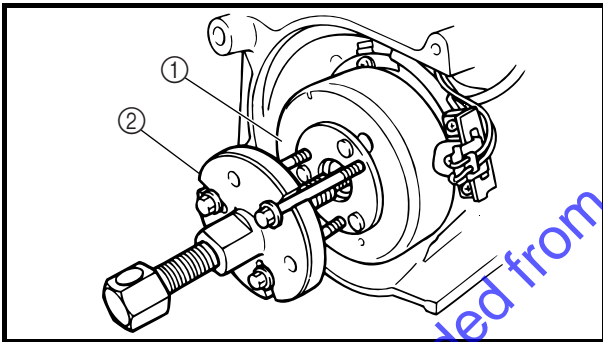
- generator rotor nut ①
- washer

NOTE:

While holding the generator rotor ② with the rotor holding tool ③, loosen the generator rotor nut.



Rotor holding tool
YU-01235

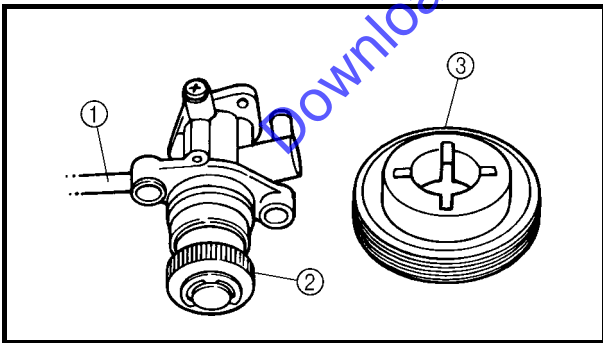


2. Remove:

- generator rotor ①
- (with the flywheel puller set ②)
- woodruff key



Flywheel puller set
YU-90105



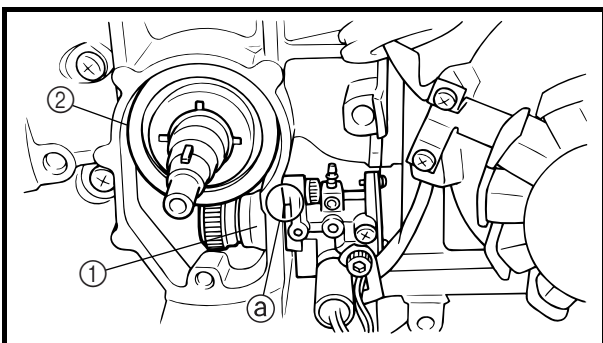
CHECKING THE AUTOLUBE PUMP

1. Check:

- oil hose ①
- Obstruction → Blow out with compressed air.

2. Check:

- autolube pump ②
- pump drive gear ③
- Damage → Replace.



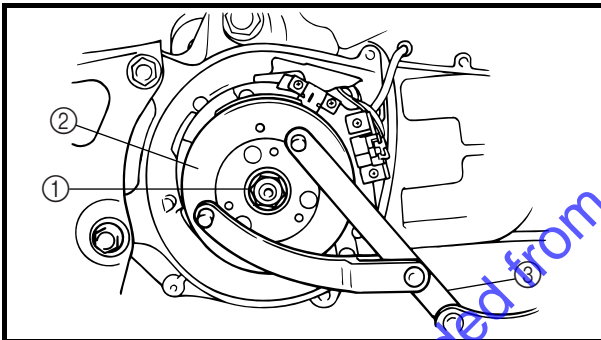
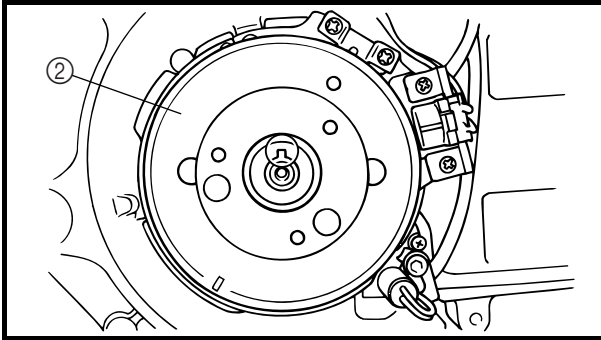
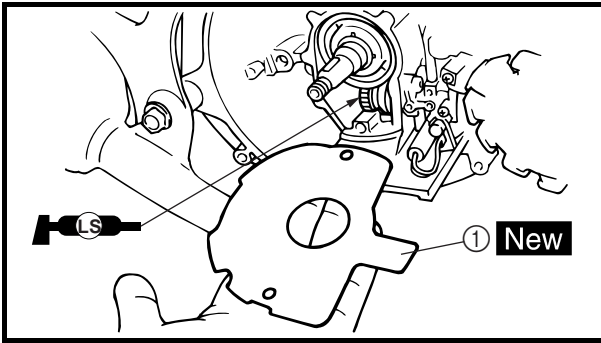
INSTALLING THE AUTOLUBE PUMP

1. Install:

- autolube pump ①
- pump drive gear ②

CAUTION:

Push the autolube pump in until it contacts the right crankcase ②, and then tighten the pump bolt to the specified torque.



EAS00354

INSTALLING THE GENERATOR

1. Install:

- gasket ① **New**
- woodruff key
- generator rotor ②
- washer
- generator rotor nut

NOTE:

- Clean the tapered portion of the crankshaft and the generator rotor hub.
- When installing the generator rotor, make sure the woodruff key is properly seated in the keyway of the crankshaft.
- Do not allow the rotor holding tool to touch the projection on the generator rotor.

2. Tighten:

- generator rotor nut ①

38 Nm (3.8 m · kg, 27 ft · lb)

NOTE:

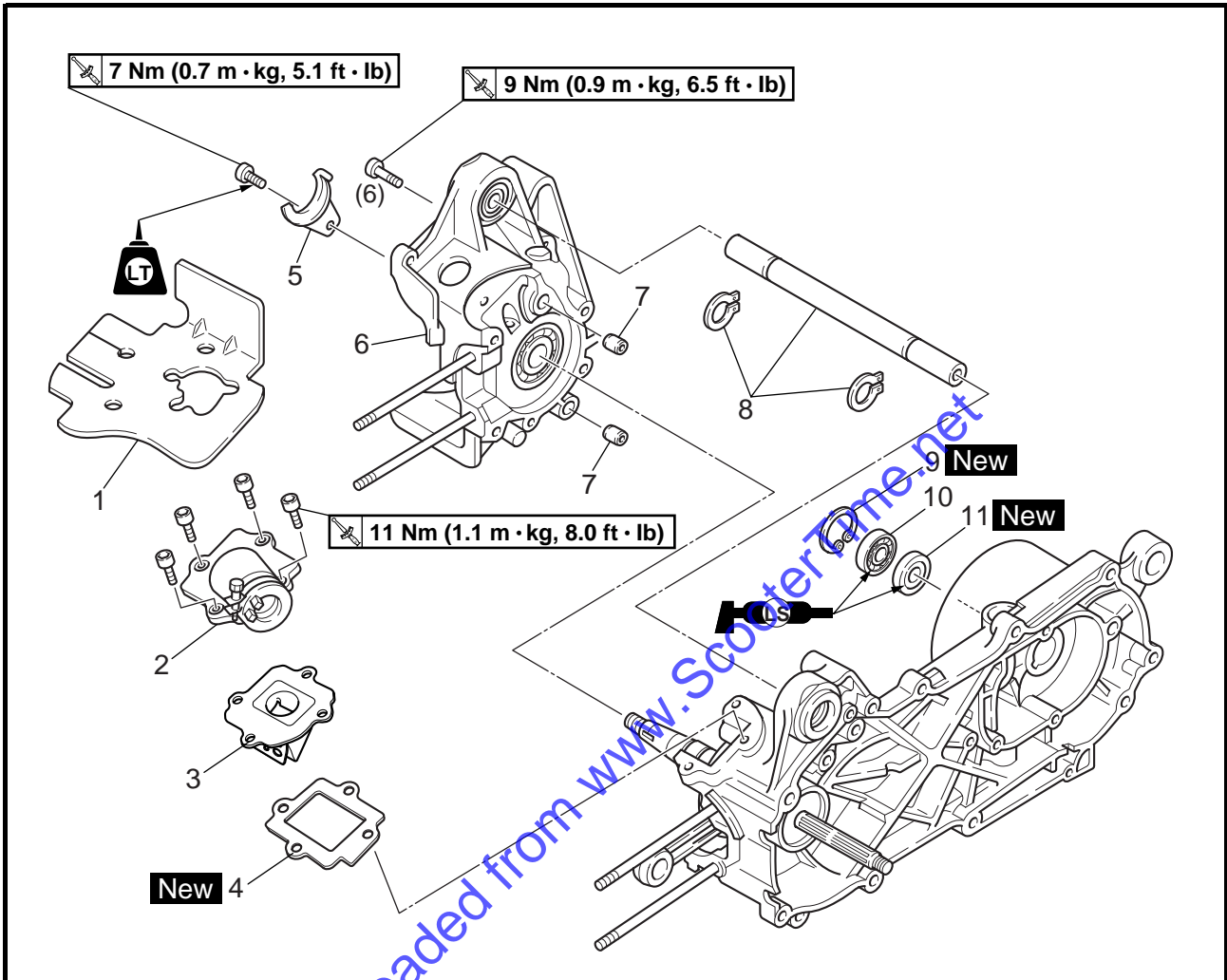
- While holding the generator rotor ② with the rotor holding tool ③, tighten the generator rotor nut ①.
- Do not allow the rotor holding tool to touch the projection on the generator rotor.



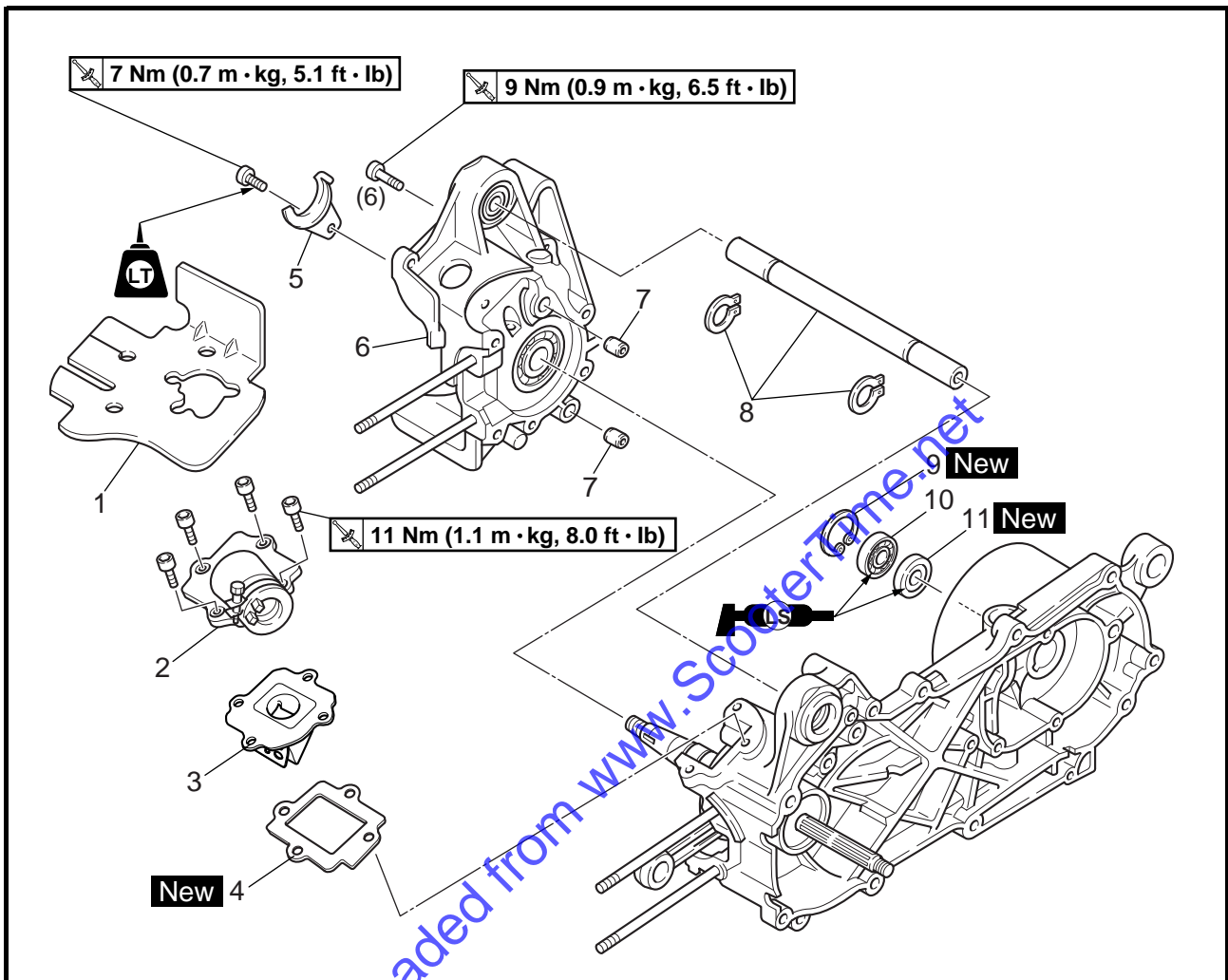
**Rotor holding tool
YU-01235**



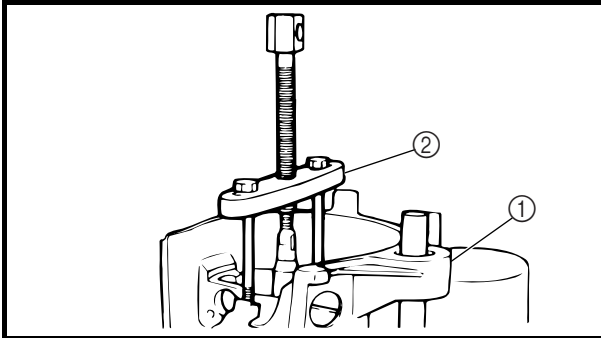
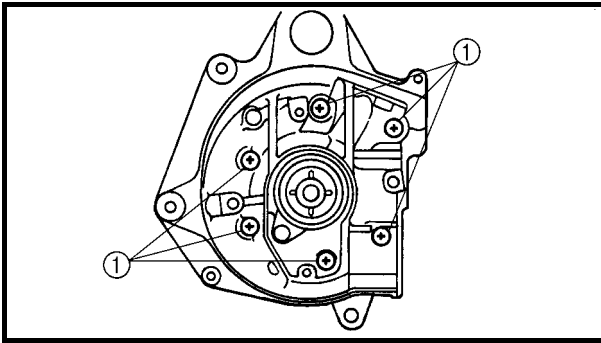
CRANKCASE



Order	Job/Part	Q'ty	Remarks
	Separating the crankcase		Remove the parts in the order listed.
	Rear wheel assembly		Refer to "REAR WHEEL AND BRAKE" in chapter 4.
	Engine assembly		Refer to "ENGINE REMOVAL".
	Cylinder head, cylinder and piston		Refer to "CYLINDER HEAD, CYLINDER AND PISTON".
	Sheaves cover		Refer to "KICKSTARTER".
	V-belt and secondary pulley		Refer to "BELT DRIVE".
	Starter clutch assembly and starter motor		Refer to "STARTER CLUCH AND STARTER MOTOR".
	Generator rotor		Refer to "GENERATOR AND AUTOLUBE PUMP".
	Autolube pump		Refer to "AUTOLUBE PUMP".
	Rear wheel		Refer to "REAR WEEL AND BRAKE" in chapter 4.
	Transmission		Refer to "TRANSMISSION".



Order	Job/Part	Q'ty	Remarks
1	Cover	1	
2	Intake manifold	1	
3	Reed valve assembly	1	
4	Valve seat gasket	1	
5	Bearing retainer	1	
6	Right crankcase	1	Refer to "DISASSEMBLING THE CRANKCASE".
7	Dowel pin	2	
8	Engine mount spacer	1	
9	Circlip	1	
10	Bearing	1	
11	Oil seal	1	
			For installation, reverse the removal procedure.



EAS00385

DISASSEMBLING THE CRANKCASE

1. Remove:

- crankcase screws ①

NOTE:

Loosen each screw 1/4 of a turn at a time, in stages and in a crisscross pattern. After all of the screws are fully loosened, remove them.

2. Remove:

- right crankcase ①

CAUTION:

Tap on one side of the crankcase with a soft-face hammer. Tap only on reinforced portions of the crankcase, not on the crankcase mating surfaces. Work slowly and carefully and make sure the crankcase halves separate evenly.

NOTE:

Remove the crankcase separating tool ②.



Crankcase separating tool
YU-01135

EAS00399

CHECKING THE CRANKCASE

1. Thoroughly wash the crankcase halves in a mild solvent.
2. Thoroughly clean all the gasket surfaces and crankcase mating surfaces.
3. Check:
 - crankcase
Cracks/damage → Replace.
 - oil delivery passages
Obstruction → Blow out with compressed air.



EAS00401

CHECKING THE BEARINGS AND OIL SEALS

1. Check:

- bearings

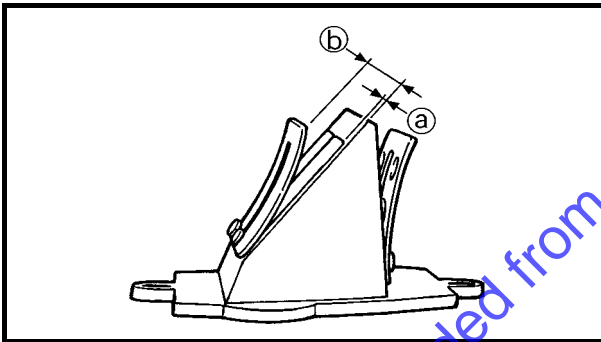
Clean and lubricate the bearings, then rotate the inner race with your finger.

Rough movement → Replace.

2. Check:

- oil seals

Damage/wear → Replace.



CHECKING THE REED VALVE

1. Measure:

- reed valve bending ①

Out of specification → Replace.



Reed valve bending

<Limit>: 0.2 mm (0.008 in)

2. Measure:

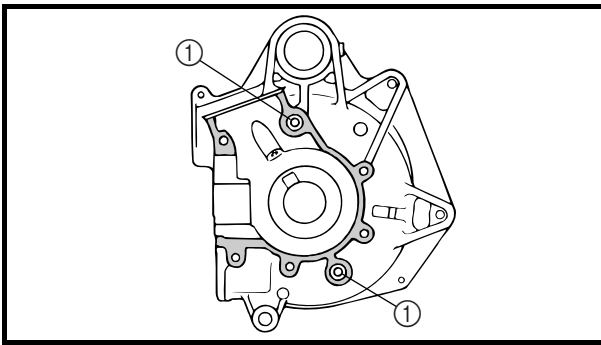
- valve stopper height ②

Out of specification → Adjust stopper/
replace valve stopper.



Valve stopper height

7.0 ~ 7.4 mm (0.28 ~ 0.29 in)



EAS00416

ASSEMBLING THE CRANKCASE

1. Apply:
 - sealant
(onto the crankcase mating surfaces)

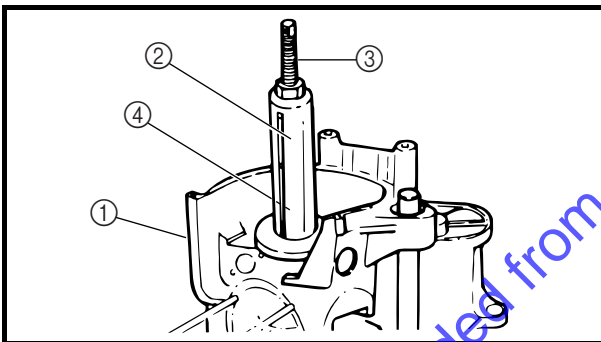


Quick Gasket®
ACC-1100-15-01

NOTE:

Do not allow any sealant to come into contact with the oil gallery.

2. Install:
 - dowel pins ①




3. Install:
 - left crankcase ①
(onto the right crankcase)
Use the crankshaft installing tool.



Crankshaft installer pot ②
YU-90058
Crankshaft installer bolt ③
YU-90060
Crankshaft installer adapter
(M10) ④
YU-90062

4. Install:
 - crankcase screws

 **9 Nm (0.9 m · kg, 6.5 ft · lb)**

NOTE:

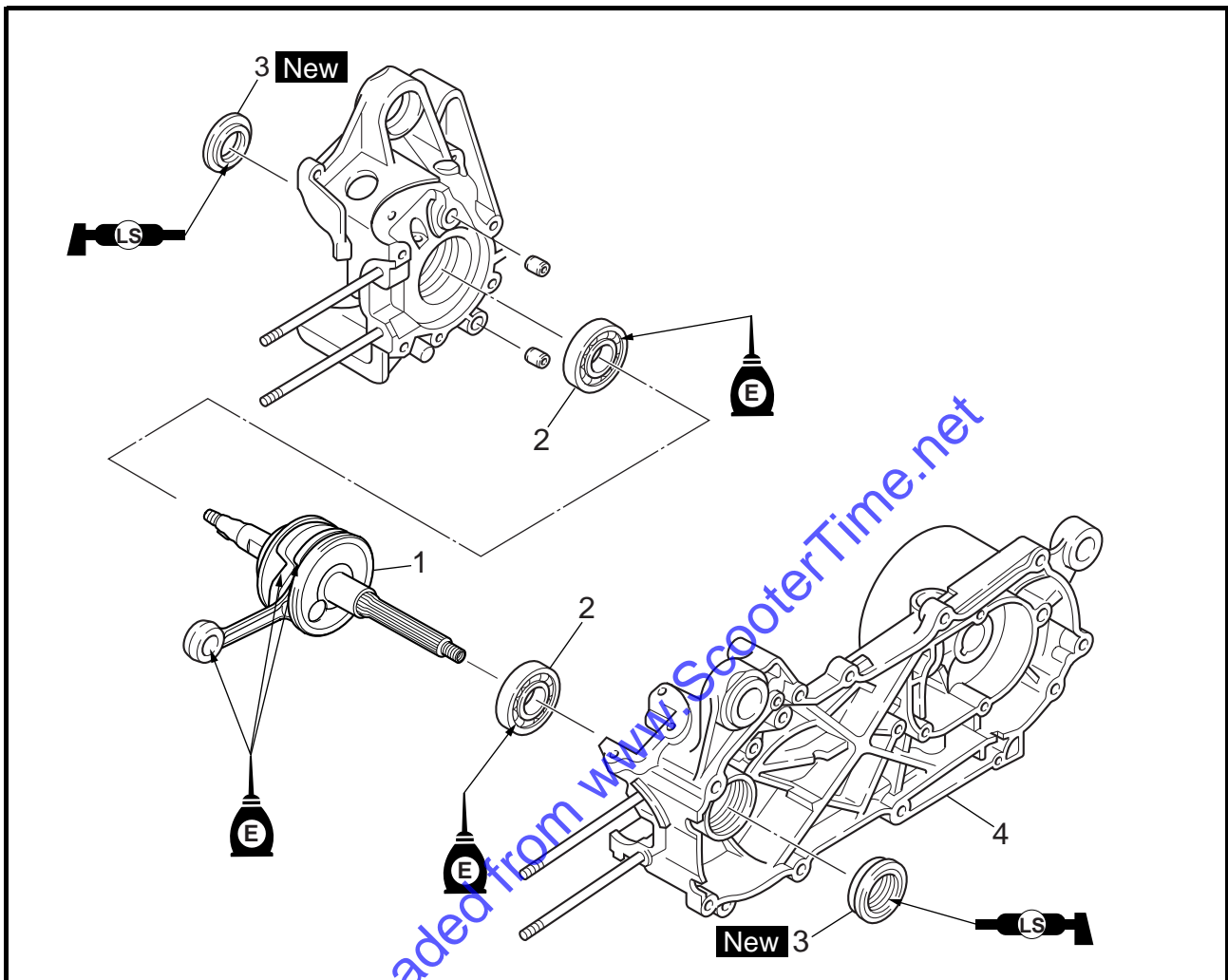
Tighten each bolt 1/4 of a turn at a time, in stages and in a crisscross pattern.

5. Apply:
 - engine oil
(onto the crankshaft pins bearings and oil delivery holes)
6. Check:
 - crankshaft and transmission operation
Rough movement → Repair.

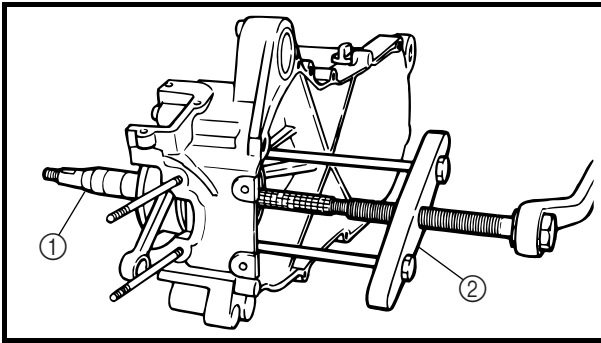


EAS00381

CRANKSHAFT



Order	Job/Part	Q'ty	Remarks
	Removing the crankshaft		Remove the parts in the order listed. Refer to "ENGINE REMOVAL". Separate. Refer to "CRANKCASE". For installation, reverse the removal procedure.
	Engine assembly		
	Crankcase		
1	Crankshaft	1	
2	Bearing	2	
3	Oil seal	1	
4	Crankcase 1	1	



EAS00388

REMOVING THE CRANKSHAFT ASSEMBLY

1. Remove:
 - crankshaft assembly ①

NOTE:

- Remove the crankshaft assembly with the crankcase separating tool ②.
- Make sure the crankcase separating tool is centered over the crankshaft assembly.



**Crankcase separating tool
YU-01135**

EAS00394

CHECKING THE CRANKSHAFT

1. Measure:
 - crankshaft runout ①
Out of specification → Replace the crankshaft, bearing(s) or both.

NOTE:

Turn the crankshaft slowly.



**Maximum crankshaft runout
0.03 mm (0.0012 in)**

2. Measure:
 - big end side clearance ②
Out of specification → Replace the big end bearing, crankshaft pin, or connecting rod.

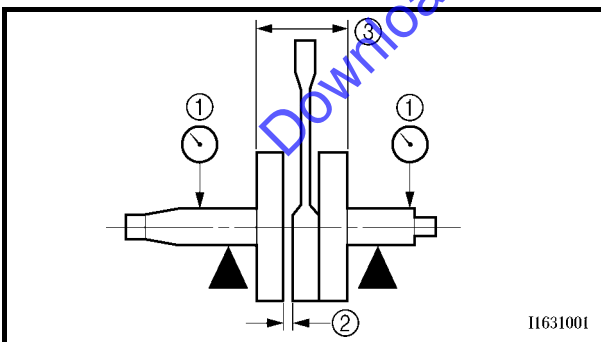


**Big end side clearance
0.35 ~ 0.75 mm
(0.0138 ~ 0.0295 in)
<Limit>: 1 mm (0.0394 in)**

3. Measure:
 - crankshaft width ③
Out of specification → Replace the crankshaft.

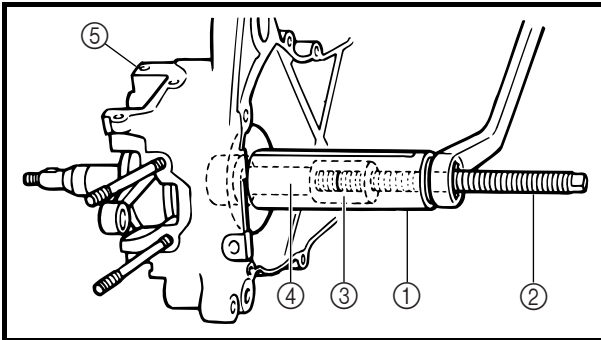


**Crankshaft width
37.90 ~ 37.95 mm (1.492 ~ 1.494 in)**





4. Check:
- bearing
Cracks/damage/wear → Replace.



EAS00408

INSTALLING THE CRANKSHAFT

1. Install:
- crankshaft installing tool

	Crankshaft installer pot ① YU-90058
	Crankshaft installer bolt ② YU-90060
	Crankshaft installer adapter (M10) ③ YU-90062

2. Install:
- crankshaft assembly ④
(to the left crankcase ⑤)

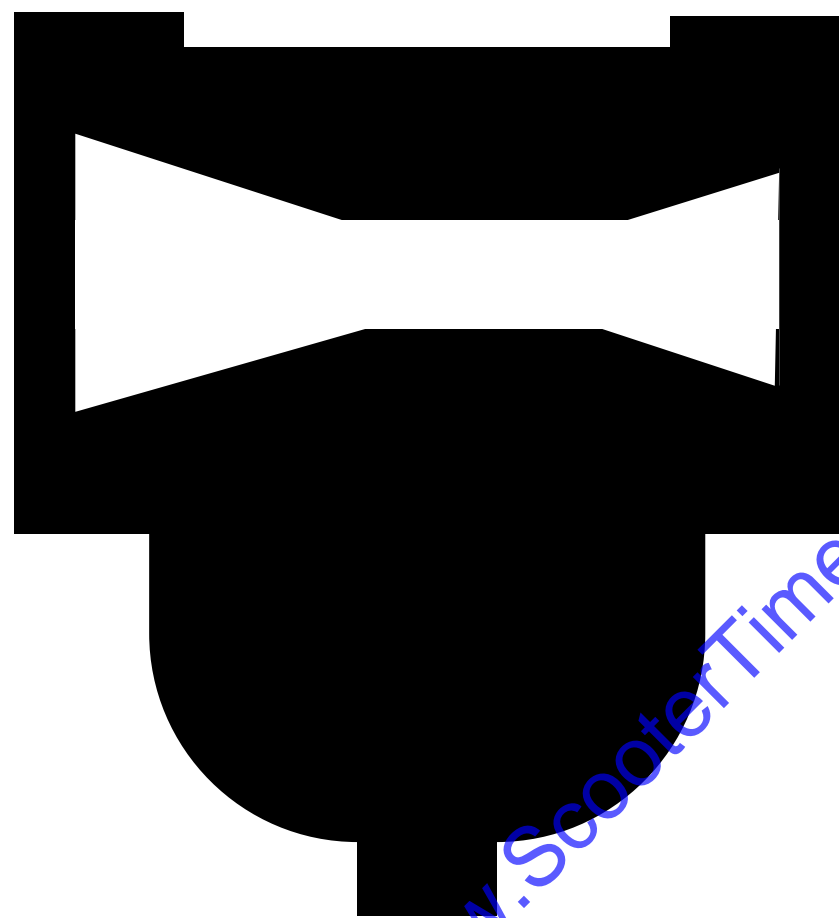
CAUTION:

To avoid scratching the crankshaft and to ease the installation procedure, lubricate the oil seal lips with grease and each bearing with engine oil.

NOTE:

Hold the connecting rod at top dead center (TDC) with one hand while turning the nut of the crankshaft installing tool with the other. Turn the crankshaft installing tool until the crankshaft assembly bottoms against the bearing.

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CARB

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CHAPTER 6 CARBURETION

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CHECKING THE AUTOCHOKE ASSEMBLY	6-7
CHECKING THE FUEL COCK OPERATION.....	6-8

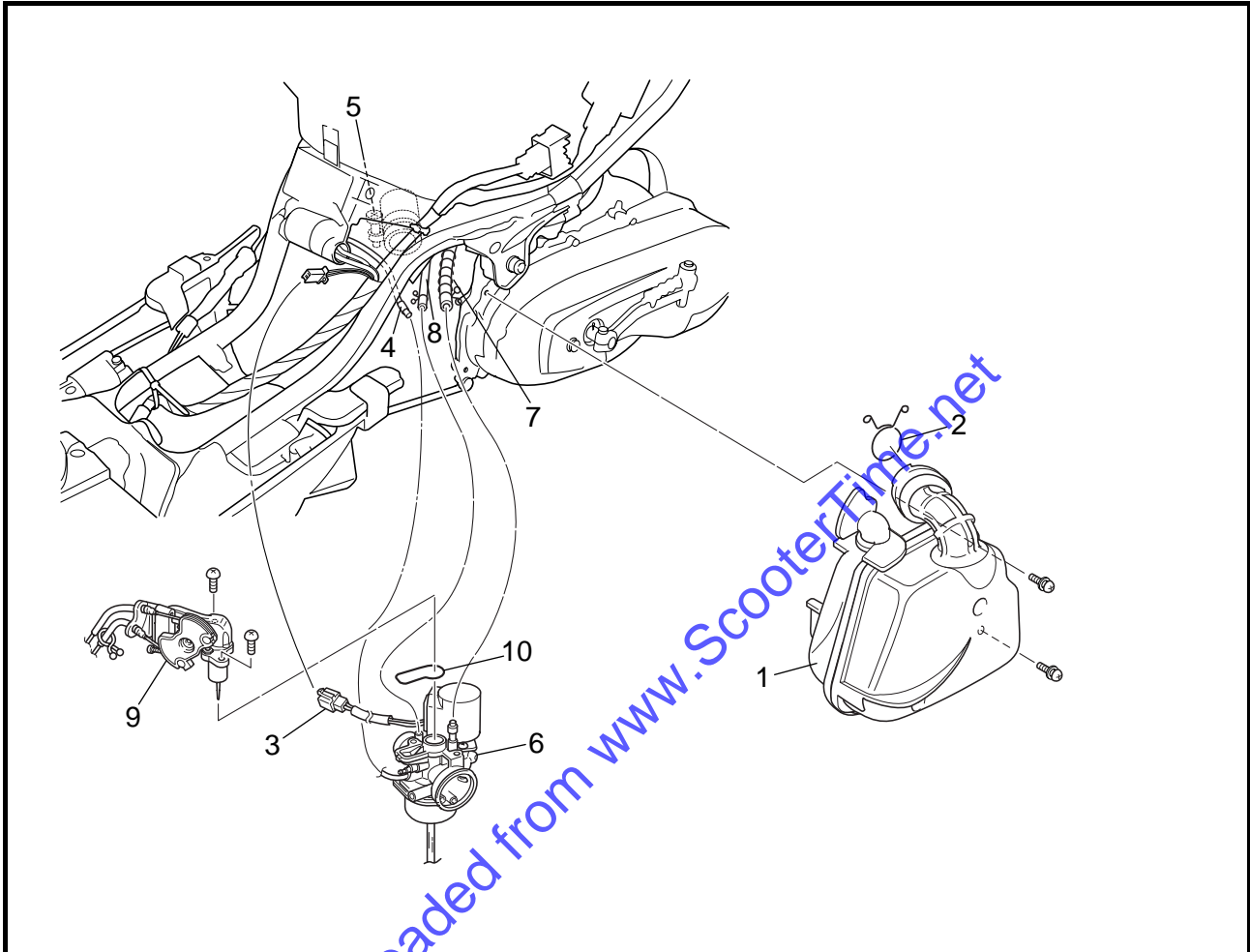
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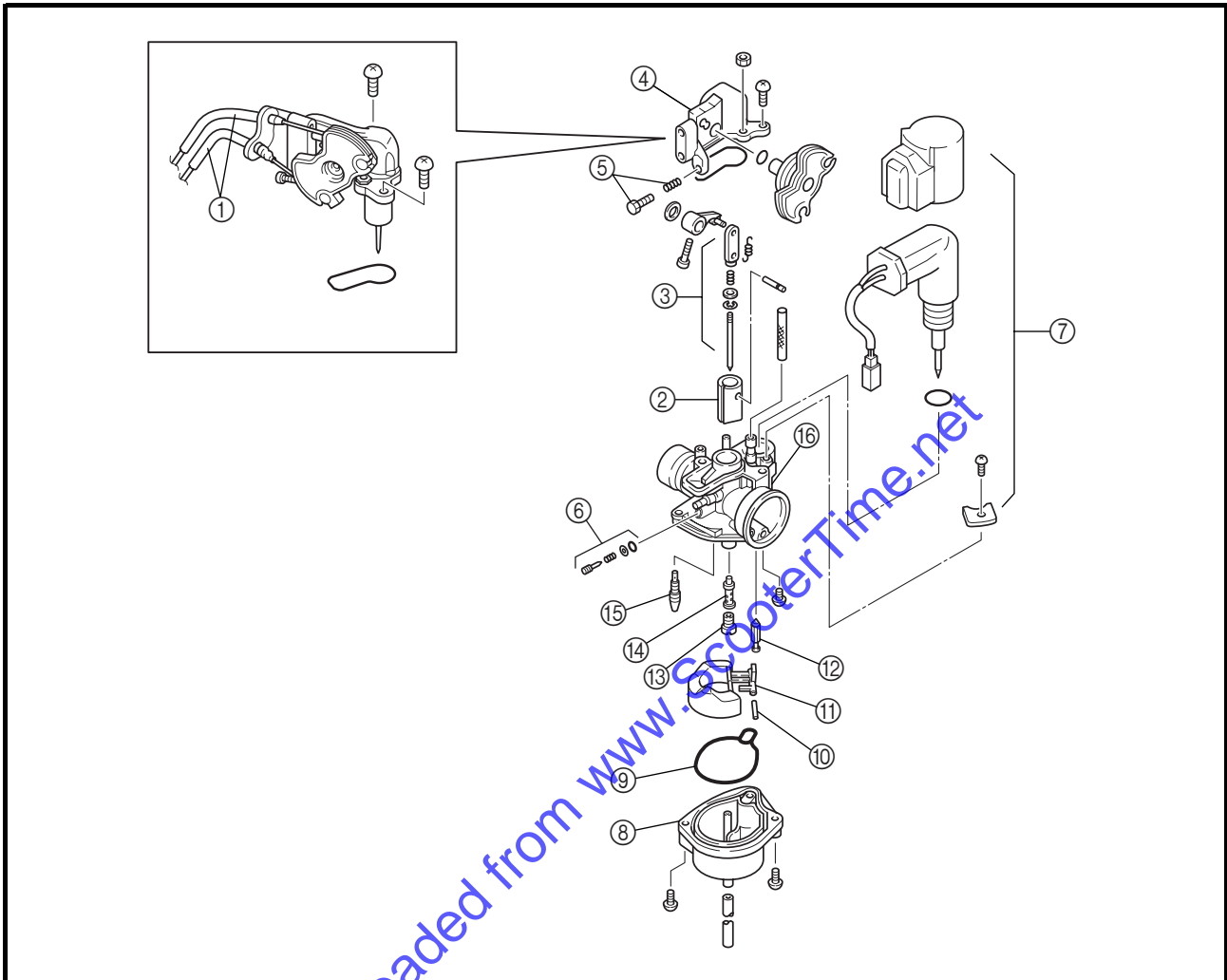


CARBURETION

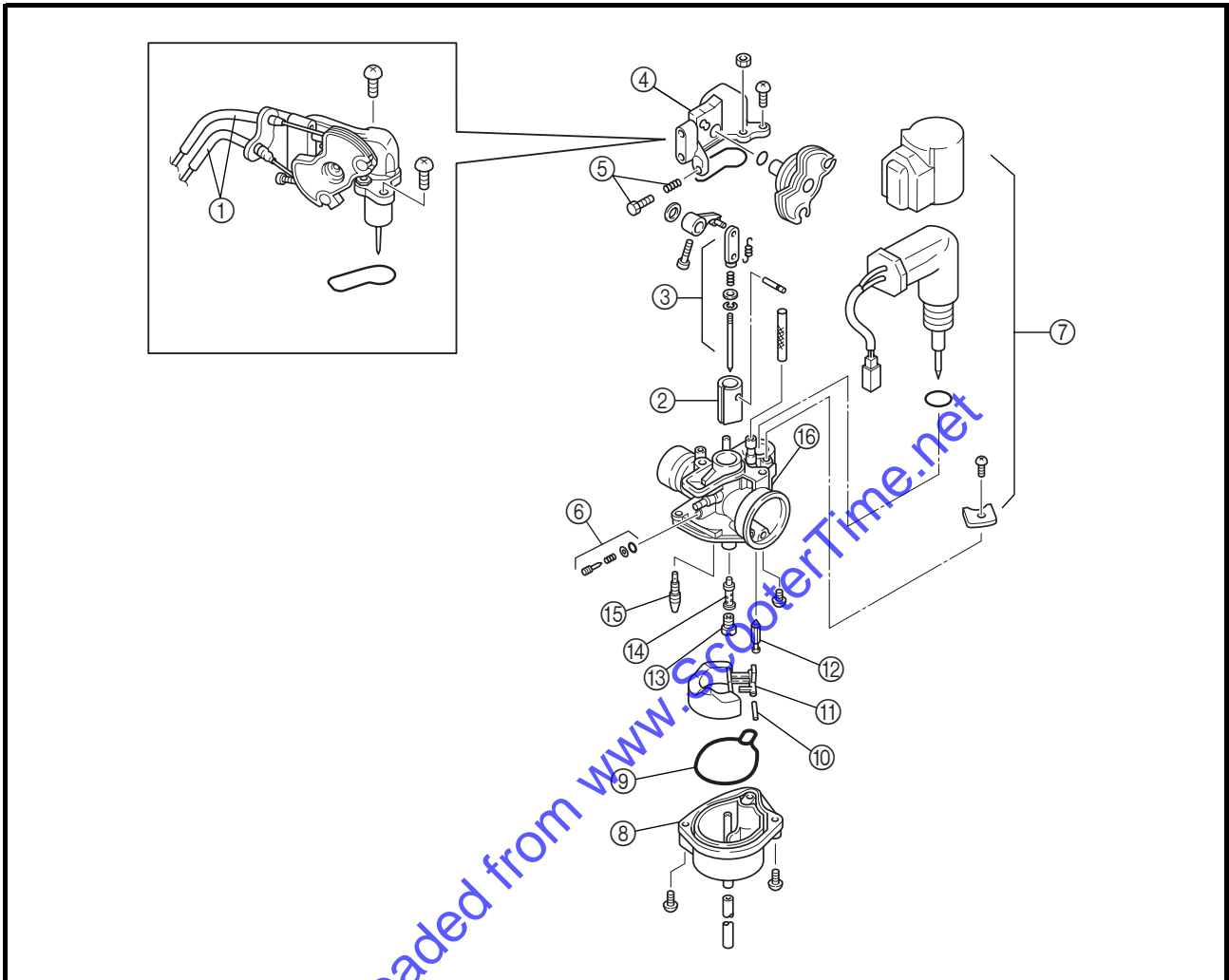
CARBURETOR



Order	Job/Part	Q'ty	Remarks
	Removing the carburetor		Remove the parts in the order listed.
	Center cover, side cover (left) and foot-rest board		Refer to "SIDE COVERS AND FOOT-REST BOARD" in chapter 3.
1	Air filter case assembly	1	
2	Clip	1	
3	Auto choke coupler	1	Disconnect.
4	Oil delivery hose	1	
5	Clamp screw (intake manifold)	1	Loosen.
6	Carburetor assembly	1	
7	Fuel hose	1	
8	Vacuum hose	1	
9	Throttle assembly	1	
10	O-ring	1	
			For installation, reverse the removal procedure.



Order	Job/Part	Q'ty	Remarks
	Disassembling the carburetor		Remove the parts in the order listed. NOTE: Before disassembling the carburetor, make sure to note the number of times the pilot air screw is turned out from the seated position to its set position.
①	Throttle cables	2	
②	Throttle valve	1	
③	Jet needle kit	1	
④	Mixing chamber cap	1	
⑤	Throttle stop screw	1	
⑥	Pilot air screw assembly	1	
⑦	Auto choke assembly	1	
⑧	Float chamber	1	



Order	Job/Part	Q'ty	Remarks
⑨	O-ring	1	
⑩	Float pivot pin	1	
⑪	Float	1	
⑫	Needle valve	1	
⑬	Main jet	1	
⑭	Needle jet	1	
⑮	Pilot jet	1	
⑯	Carburetor body	1	
			For assembly, reverse the disassembly procedure.



EAS00485

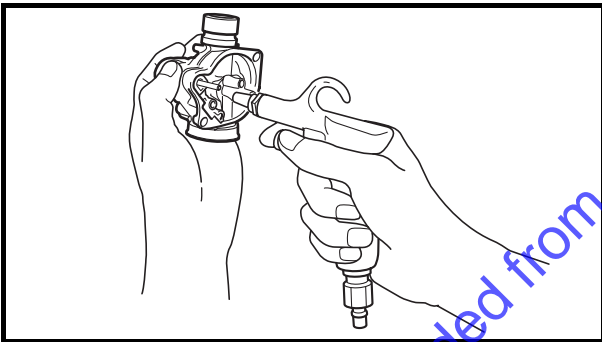
CHECKING THE CARBURETOR

NOTE:

Before disassembling the carburetor, make sure to note the number of times the pilot air screw is turned out from the seated position to its set position.

1. Check:

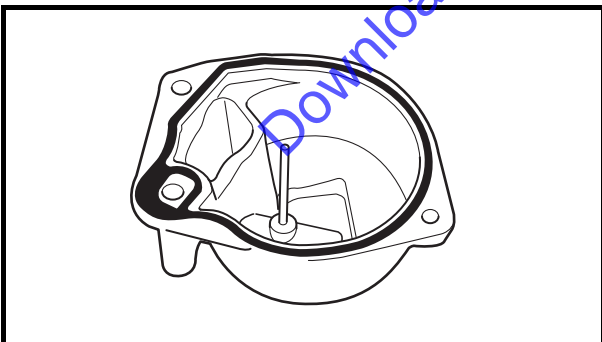
- carburetor body
 - float chamber
 - jet housing
- Cracks/damage → Replace.



2. Check:

- fuel passages
- Obstruction → Clean.

- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- a. Wash the carburetor in a petroleum-based solvent. Do not use any caustic carburetor cleaning solution.
 - b. Blow out all of the passages and jets with compressed air.



3. Check:

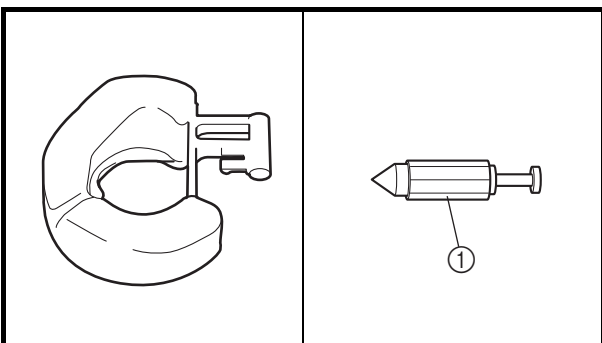
- float chamber body
- Dirt → Clean.

4. Check:

- float chamber rubber gasket
- Cracks/damage/wear → Replace.

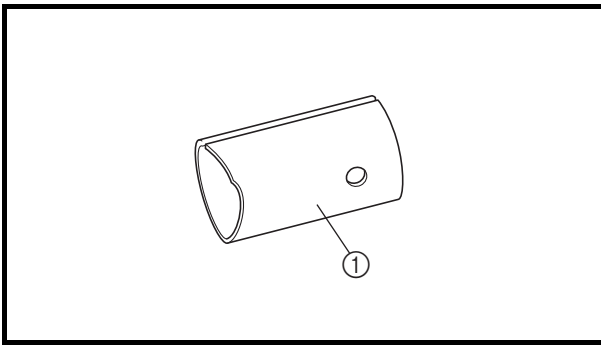
5. Check:

- float
- Damage → Replace.



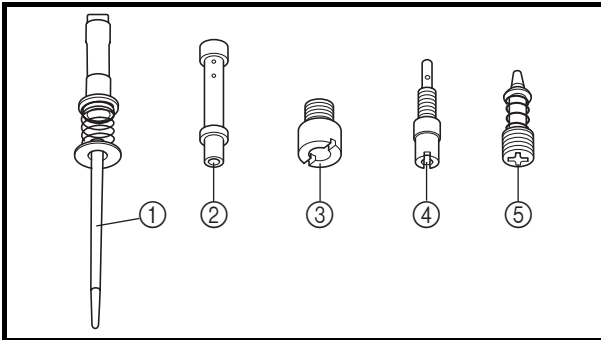
6. Check:

- needle valve ①
- Damage/obstruction/wear → Replace the needle valve.



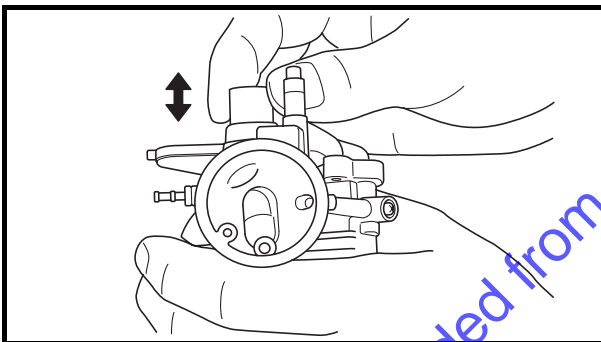
7. Check:

- throttle valve ①
Damage/scratches/wear → Replace.



8. Check:

- jet needle kit ①
- needle jet ②
- main jet ③
- pilot jet ④
- pilot air screw assembly ⑤
Bends/damage/wear → Replace.
Obstruction → Clean.
Blow out the jets with compressed air.



9. Check:

- throttle valve movement
Insert the throttle valve into the carburetor body and move it up and down.
Tightness → Replace the piston valve.

10. Check:

- vacuum hose
- fuel hose
Cracks/damage/wear → Replace.
Obstruction → Clean.
Blow out the hoses with compressed air.

EAS00487

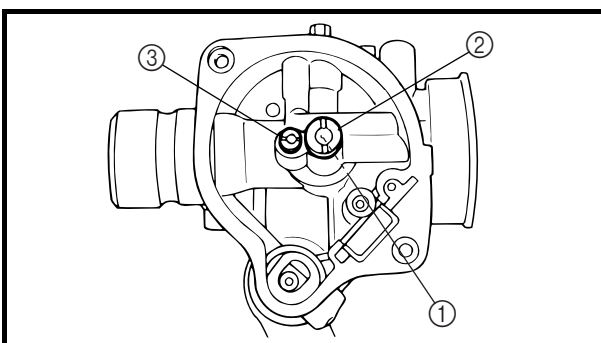
ASSEMBLING THE CARBURETOR

NOTE:

Before assembling the carburetor, make sure to turn out the pilot air screw the same number of times, as noted before disassembly, from the seated position to the set position.

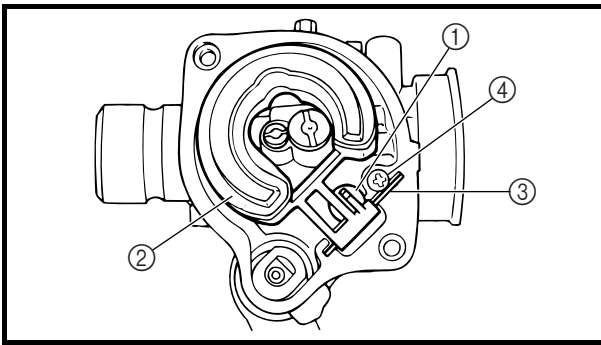
CAUTION:

- Before assembling the carburetor, wash all of the parts in a petroleum-based solvent.
- Always use a new gasket.

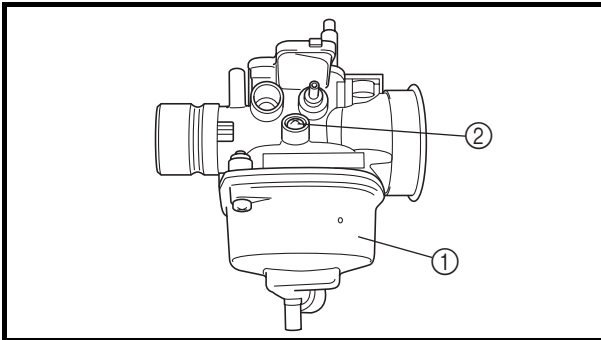


1. Install:

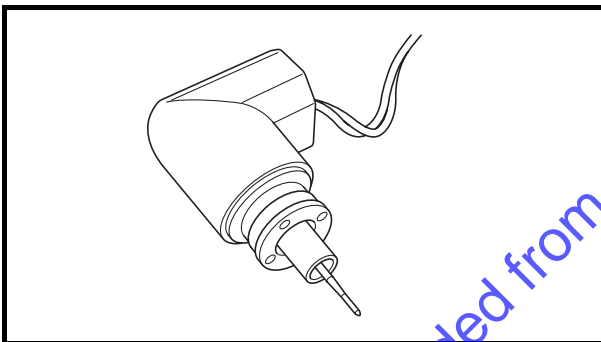
- needle jet ①
- main jet ②
- pilot jet ③



2. Install:
- needle valve ①
 - float ②
 - float pivot pin ③
 - screw ④



3. Install:
- float chamber ①
 - pilot air screw assembly ②



4. Install:
- starter plunger kit
5. Install:
- throttle valve
 - jet needle holder
 - jet needle kit

NOTE:

Align the groove of the throttle valve with the projection of the carburetor body.

6. Install:
- throttle cable

EAS00492

INSTALLING THE CARBURETOR

1. Adjust:
- engine idling speed



Engine idling speed
1,800 r/min

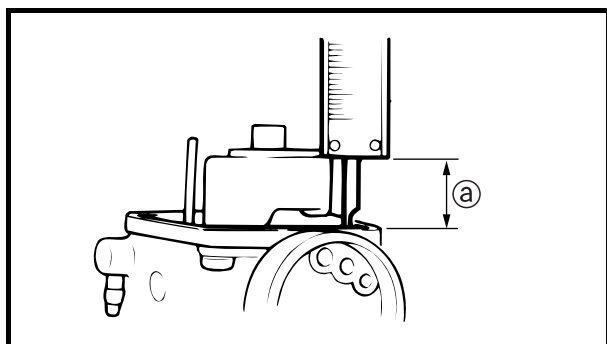
Refer to “ADJUSTING THE ENGINE IDLING SPEED” in chapter 3.

2. Adjust:
- throttle cable free play



Throttle cable free play (at the flange of the throttle grip)
1.5 ~ 3.5 mm (0.06 ~ 0.14 in)

Refer to “ADJUSTING THE THROTTLE CABLE FREE PLAY” in chapter 3.



EAS00499

MEASURING AND ADJUSTING THE FLOAT HEIGHT

1. Measure:
 - float height ①
 Out of specification → Replace the needle valve.



Float height
15 ~ 17 mm (0.59 ~ 0.67 in)

- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- a. Remove the carburetor.
 - b. Hold the carburetor in an upside down position.
 - c. Measure the distance from the mating surface of the float chamber to the top of the float.
 - d. If the float height is not within specification, check the needle valve.
 - e. If either is worn, replace them as a set.
 - f. Install the carburetor.



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EAS00503

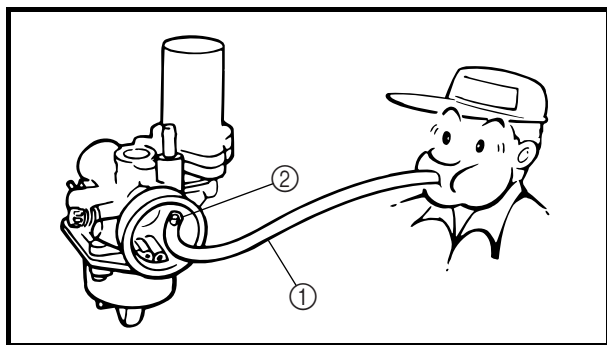
CHECKING THE AUTOCHOKE ASSEMBLY

NOTE: _____
When checking the autochoke assembly, the ambient temperature must be lower than 45 °C (113 °F).

1. Remove:
 - carburetor
2. Check:
 - autochoke assembly

- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- a. Connect a 3.3-mm hose ① to the starter air passage ② and blow into the hose.

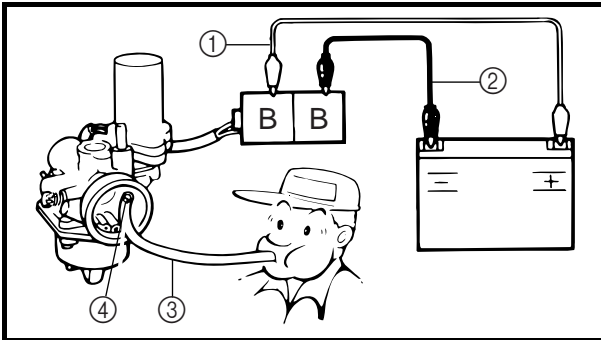
NOTE: _____
When the starter plunger is open, air should come out of the other side of the starter air passage.





Starter plunger opens.	Perform step (3).
Starter plunger closes.	Replace the autochoke assembly.

▲▲▲ ▲▲▲▲ ▲▲▲▲ ▲▲▲▲ ▲▲▲▲



3. Check:
- autochoke assembly

▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼

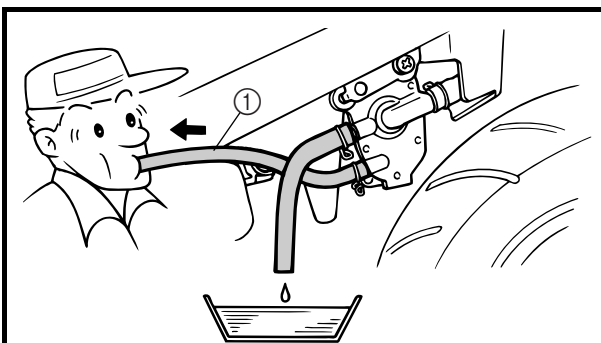
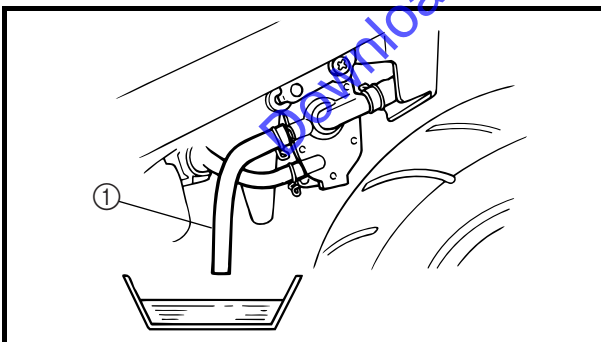
- a. Connect the autochoke assembly leads to a 12.0-V battery for five minutes.

Positive battery lead ① → black
Negative battery lead ② → black

- b. Connect a 3.3-mm hose ③ to the starter air passage ④ and blow into the hose.

Starter plunger opens.	Replace the autochoke assembly.
Starter plunger closes.	Autochoke is OK.

▲▲▲ ▲▲▲▲ ▲▲▲▲ ▲▲▲▲ ▲▲▲▲



EAS00506

CHECKING THE FUEL COCK OPERATION

NOTE: _____
After installing the fuel cock, check its operation.

1. Place a container under the end of the fuel hose ①.

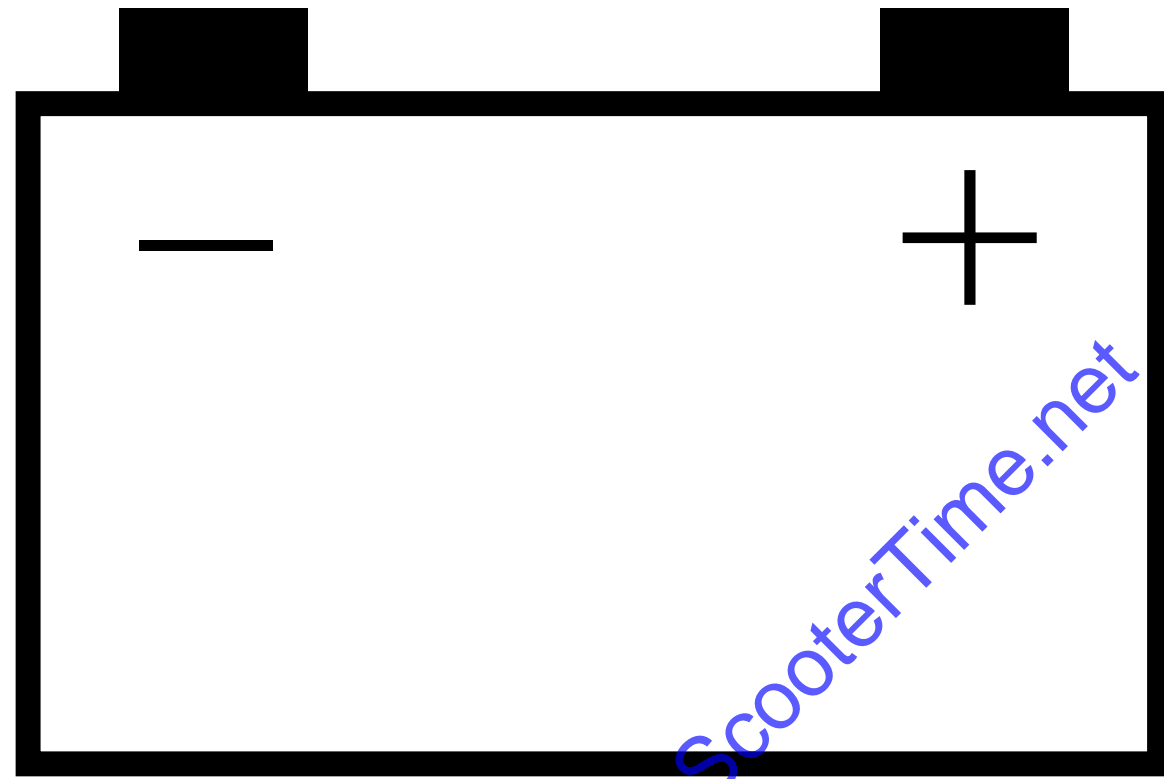
2. Check:
- fuel cock operation

▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼

- a. Suck on the end of the vacuum hose ①.

Fuel flows.	Fuel cock is OK.
Fuel does not flow.	Replace the fuel cock.

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ELEEC

7

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CHAPTER 7 ELECTRICAL

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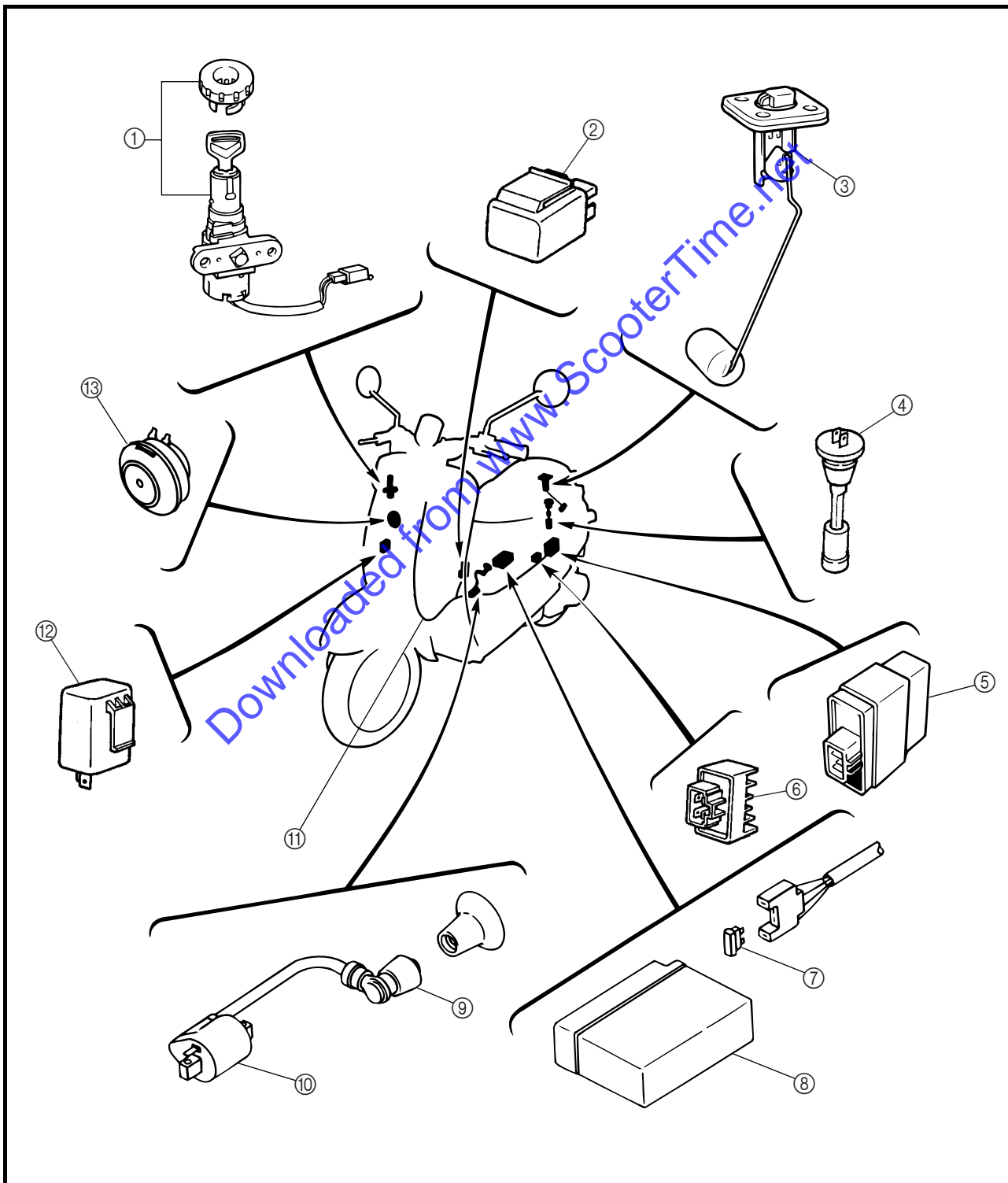
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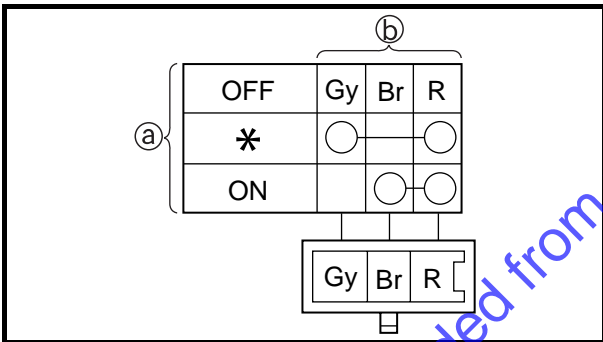
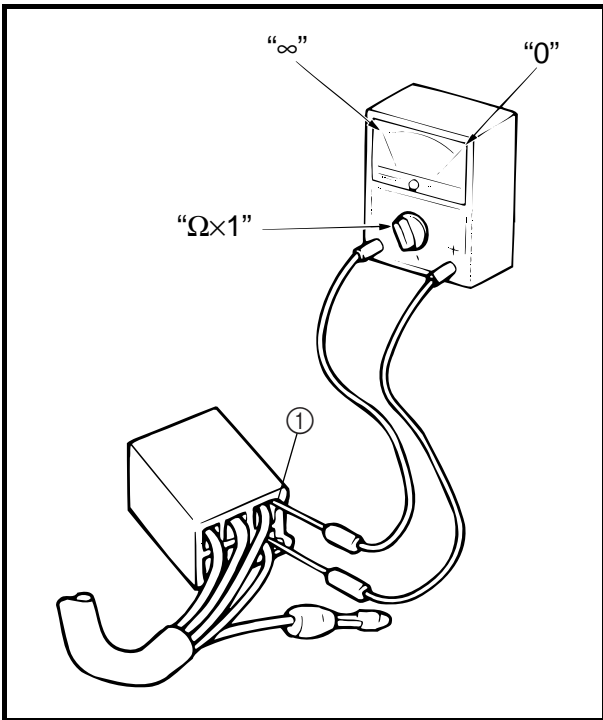
EAS00729

ELECTRICAL

ELECTRICAL COMPONENTS

- ① Main switch
- ② Starter relay
- ③ Fuel sender
- ④ Oil level switch
- ⑤ CDI unit
- ⑥ Rectifier/regulator
- ⑦ Main fuse
- ⑧ Battery
- ⑨ Spark plug cap
- ⑩ Ignition coil
- ⑪ Wire harness
- ⑫ Turn signal relay
- ⑬ Horn





EAS00730

SWITCHES

CHECKING SWITCH CONTINUITY

Check each switch for continuity with the pocket tester. If the continuity reading is incorrect, check the wiring connections and if necessary, replace the switch.

CAUTION:

Never insert the tester probes into the coupler terminal slots ①. Always insert the probes from the opposite end of the coupler, taking care not to loosen or damage the leads.



Pocket tester
YU-031

NOTE:

- Before checking for continuity, set the pocket tester to "0" and to the "Ω × 1" range.
- When checking for continuity, switch back and forth between the switch positions a few times.

The terminal connections for switches (e.g., main switch, engine stop switch) are shown in an illustration similar to the one on the left.

The switch positions ① are shown in the far left column and the switch lead colors ② are shown in the top row in the switch illustration.

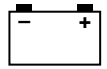
NOTE:

"○—○" indicates a continuity of electricity between switch terminals (i.e., a closed circuit at the respective switch position).

The example illustration on the left shows that:

There is continuity between red and brown when the switch is set to "ON".

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EAS00731

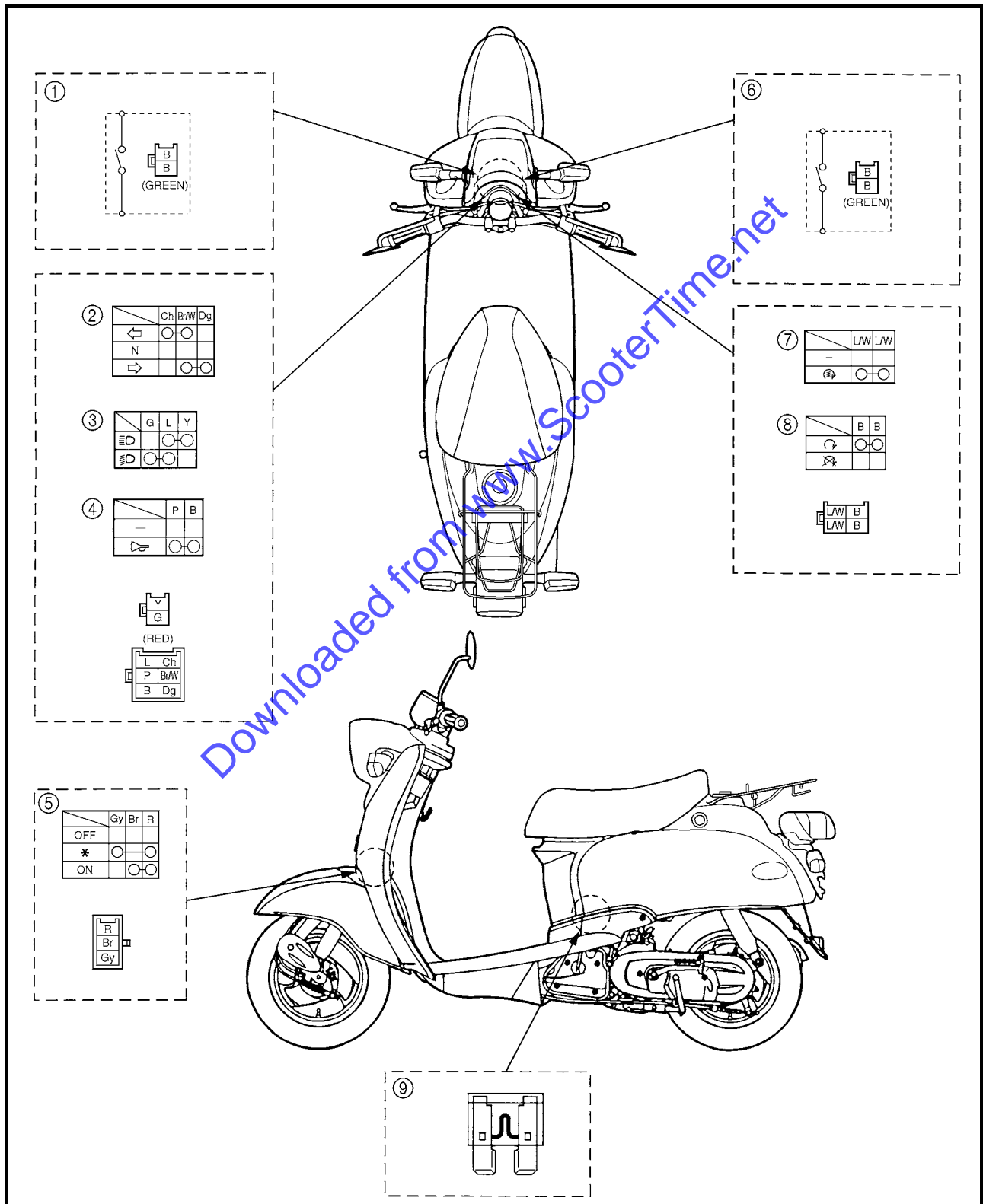
CHECKING THE SWITCHES

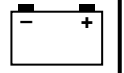
Check each switch for damage or wear, proper connections, and also for continuity between the terminals. Refer to "CHECKING SWITCH CONTINUITY".

Damage/wear → Repair or replace.

Improperly connected → Properly connect.

Incorrect continuity reading → Replace the switch.





- ① Front brake light switch
- ② Turn signal switch
- ③ Dimmer switch
- ④ Horn switch
- ⑤ Main switch
- ⑥ Rear brake light switch
- ⑦ Start switch
- ⑧ Engine stop switch
- ⑨ Main fuse

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EAS00733

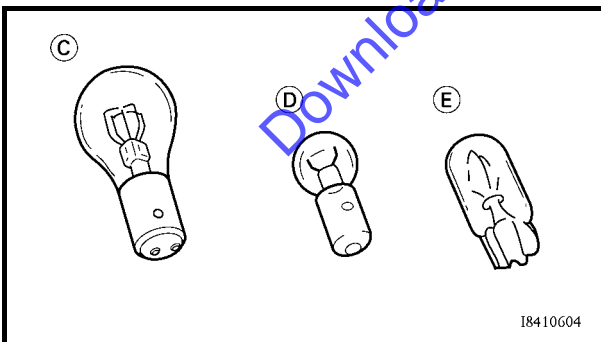
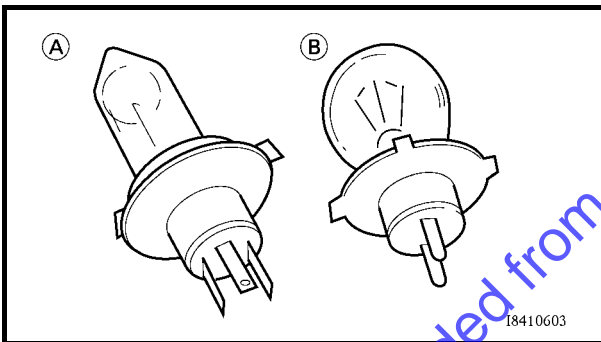
CHECKING THE BULBS AND BULB SOCKETS

Check each bulb and bulb socket for damage or wear, proper connections, and also for continuity between the terminals.

Damage/wear → Repair or replace the bulb, bulb socket or both.

Improperly connected → Properly connect.

No continuity → Repair or replace the bulb, bulb socket or both.



TYPES OF BULBS

The bulbs used on this scooter are shown in the illustration on the left.

- Bulbs ① and ② are used for the headlights and usually use a bulb holder that must be detached before removing the bulb. The majority of these types of bulbs can be removed from their respective socket by turning them counterclockwise.
- Bulbs ③ are used for turn signal and tail/brake lights and can be removed from the socket by pushing and turning the bulb counterclockwise.
- Bulbs ④ and ⑤ are used for meter and indicator lights and can be removed from their respective socket by carefully pulling them out.

CHECKING THE CONDITION OF THE BULBS

The following procedure applies to all of the bulbs.

1. Remove:
 - bulb

⚠ WARNING

Since the headlight bulb gets extremely hot, keep flammable products and your hands away from the bulb until it has cooled down.

CAUTION:

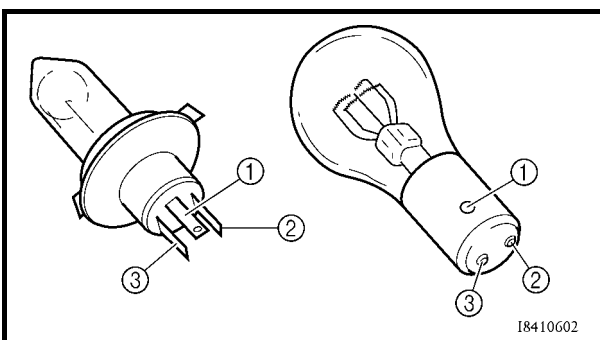
- Be sure to hold the socket firmly when removing the bulb. Never pull the lead, otherwise it may be pulled out of the terminal in the coupler.
- Avoid touching the glass part of the headlight bulb to keep it free from oil, otherwise the transparency of the glass, the life of the bulb, and the luminous flux will be adversely affected. If the headlight bulb gets soiled, thoroughly clean it with a cloth moistened with alcohol or lacquer thinner.

2. Check:
 - bulb (for continuity)
(with the pocket tester)
No continuity → Replace.



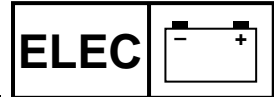
NOTE:

Before checking for continuity, set the pocket tester to "0" and to the " $\Omega \times 1$ " range.



- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- a. Connect the positive tester probe to terminal ① and the negative tester probe to terminal ②, and check the continuity.
 - b. Connect the positive tester probe to terminal ① and the negative tester probe to terminal ③, and check the continuity.
 - c. If either of the readings indicate no continuity, replace the bulb.





CHECKING THE CONDITION OF THE BULB SOCKETS

The following procedure applies to all of the bulb sockets.

1. Check:
 - bulb socket (for continuity)
(with the pocket tester)
No continuity → Replace.

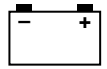


NOTE: _____
Check each bulb socket for continuity in the same manner as described in the bulb section; however, note the following.

- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- a. Install a good bulb into the bulb socket.
 - b. Connect the pocket tester probes to the respective leads of the bulb socket.
 - c. Check the bulb socket for continuity. If any of the readings indicate no continuity, replace the bulb socket.

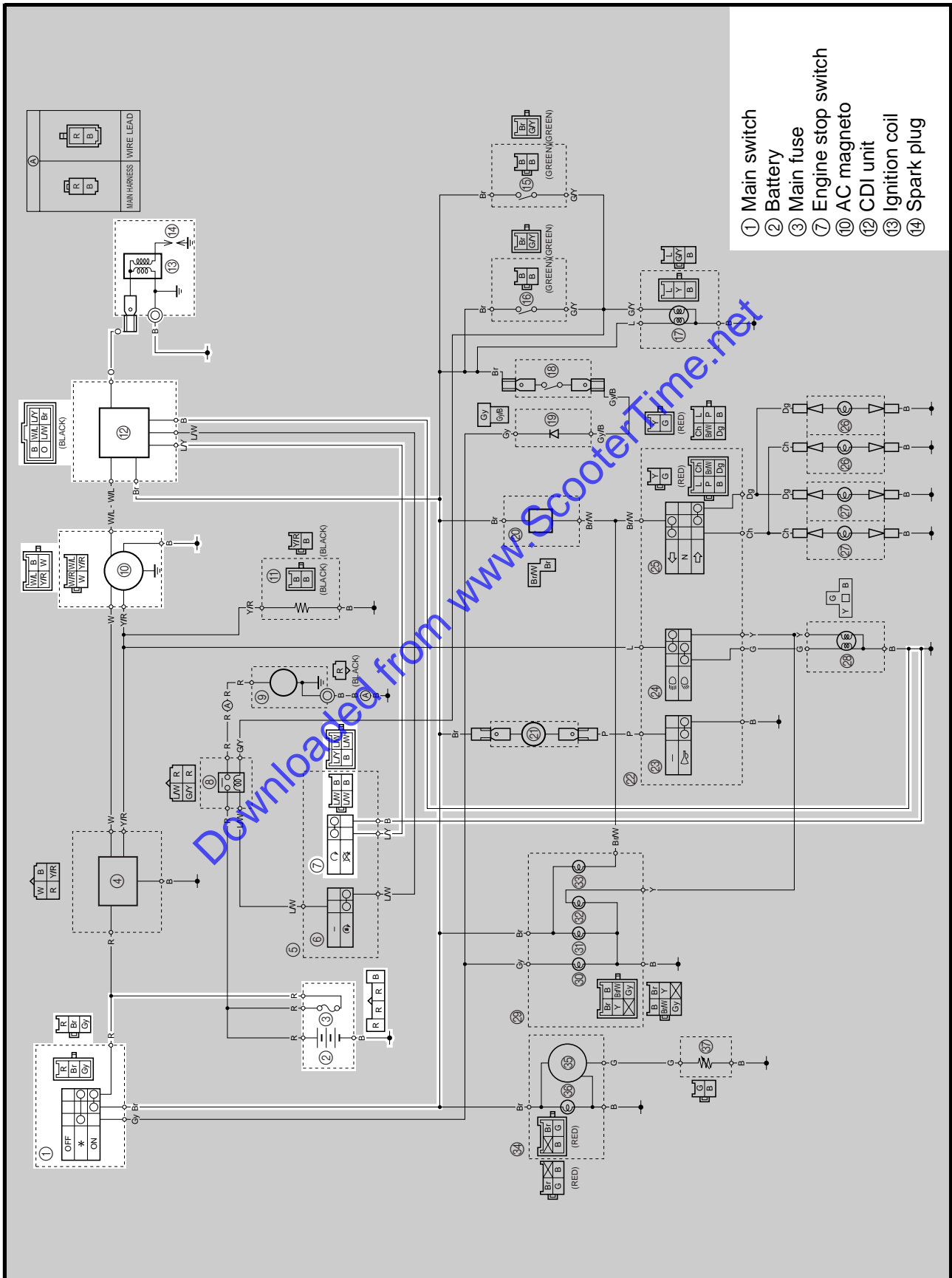
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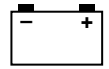
EAS00734

IGNITION SYSTEM CIRCUIT DIAGRAM



- ① Main switch
- ② Battery
- ③ Main fuse
- ⑦ Engine stop switch
- ⑩ AC magneto
- ⑫ CDI unit
- ⑬ Ignition coil
- ⑭ Spark plug

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EAS00736

TROUBLESHOOTING

The ignition system fails to operate (no spark or intermittent spark).

Check:

1. main fuse
2. battery
3. spark plug
4. ignition spark gap
5. spark plug cap resistance
6. ignition coil resistance
7. pickup coil resistance
8. main switch
9. engine stop switch
10. wiring (of the entire ignition system)

NOTE:

- Before troubleshooting, remove the following part(s):
 - 1) center cover
 - 2) side cover (left)
 - 3) side cover (right)
 - 4) leg shield
- Troubleshoot with the following special tool(s).

	Dynamic spark tester YU-34487 Pocket tester YU-03112
--	---

EAS00738

1. Main fuse • Check the main fuse for continuity. Refer to "CHECKING THE FUSE" in chapter 3. • Is the main fuse OK?
--



YES



NO

Replace the main fuse.

EAS00739

2. Battery		
• Check the condition of the battery. Refer to "CHECKING AND CHARGING THE BATTERY" in chapter 3.		
<table border="1"> <tr> <td style="text-align: center;"></td> <td> Minimum open-circuit voltage 12.8 V or more at 20 °C (68 °F) </td> </tr> </table>		Minimum open-circuit voltage 12.8 V or more at 20 °C (68 °F)
	Minimum open-circuit voltage 12.8 V or more at 20 °C (68 °F)	
• Is the battery OK?		



YES



NO

• Clean the battery terminals.
• Recharge or replace the battery.

EAS00740

3. Spark plug		
• Check the condition of the spark plug. • Check the spark plug type. • Measure the spark plug gap. Refer to "CHECKING THE SPARK PLUG" in chapter 3.		
<table border="1"> <tr> <td style="text-align: center;"></td> <td> Standard spark plug BPR7HS (NGK) Spark plug gap 0.6 ~ 0.7 mm (0.02 ~ 0.03 in) </td> </tr> </table>		Standard spark plug BPR7HS (NGK) Spark plug gap 0.6 ~ 0.7 mm (0.02 ~ 0.03 in)
	Standard spark plug BPR7HS (NGK) Spark plug gap 0.6 ~ 0.7 mm (0.02 ~ 0.03 in)	
• Is the spark plug in good condition, is it of the correct type, and is its gap within specification?		

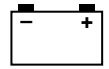


YES



NO

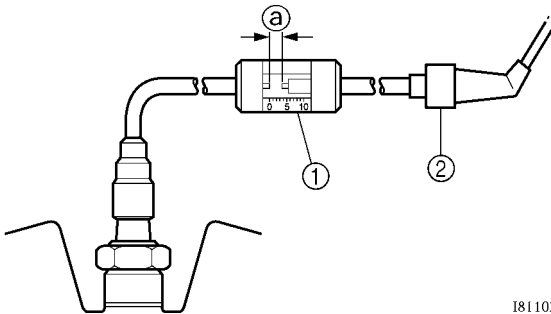
Re-gap or replace the spark plug.



EAS00742

4. Ignition spark gap

- Disconnect the spark plug cap from the spark plug.
- Connect the ignition checker/dynamic spark tester ① as shown.
- ② Spark plug cap
- Set the main switch to "ON".
- Measure the ignition spark gap ③.
- Crank the engine by pushing the starter switch and gradually increase the spark gap until a misfire occurs.



18110201



Minimum ignition spark gap
6 mm (0.24 in)

- Is there a spark and is the spark gap within specification?

NO

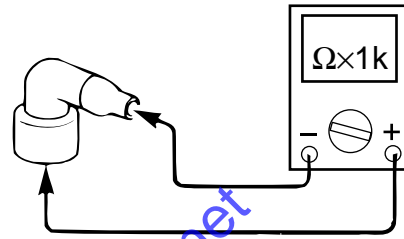
YES

The ignition system is OK.

EAS00744

5. Spark plug cap resistance

- Remove the spark plug cap from the spark plug lead.
- Connect the pocket tester ("Ω × 1k" range) to the spark plug cap as shown.
- Measure the spark plug cap resistance.



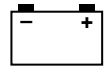
Spark plug cap resistance
5 kΩ at 20°C (68°F)

- Is the spark plug cap OK?

YES

NO

Replace the spark plug cap.

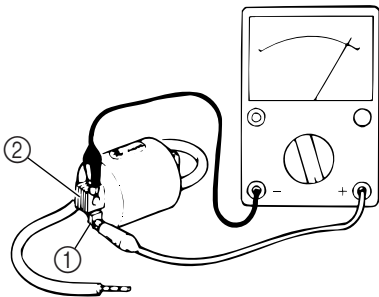


EAS00746

6. Ignition coil resistance

- Disconnect the ignition coil connectors from the ignition coil terminals.
- Connect the pocket tester ($\Omega \times 1$) to the ignition coil as shown.

Positive tester probe → orange ①
Negative tester probe →
 ignition coil base ②



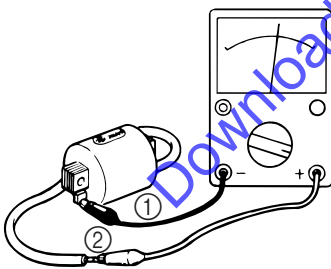
- Measure the primary coil resistance.



Primary coil resistance
 0.18 ~ 0.28 Ω at 20 °C (68 °F)

- Connect the pocket tester ($\Omega \times 1k$) to the ignition coil as shown.

Negative tester probe → orange ①
Positive tester probe → spark plug lead ②



- Measure the secondary coil resistance.



Secondary coil resistance
 6.32 ~ 9.48 k Ω at 20 °C (68 °F)

- Is the ignition coil OK?



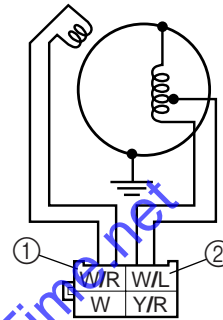
Replace the ignition coil.

EAS00748

7. Pickup coil resistance

- Disconnect the stator coil assembly coupler from the wire harness.
- Connect the pocket tester ($\Omega \times 100$) to the pickup coil terminal as shown.

Positive tester probe → white/red ①
Negative tester probe → white/blue ②



- Measure the pickup coil resistance.



Pickup coil resistance
 248 ~ 372 Ω at 20 °C (68 °F)
 (between white/red and white/blue)

- Is the pickup coil OK?



Replace the stator coil assembly.

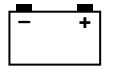
EAS00749

8. Main switch

- Check the main switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the main switch OK?



Replace the main switch.



EAS00750

9. Engine stop switch

- Check the engine stop switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the engine stop switch OK?



Replace the right handlebar switch.

EAS00754

10. Wiring

- Check the entire ignition system's wiring. Refer to "CIRCUIT DIAGRAM".
- Is the ignition system's wiring properly connected and without defects?



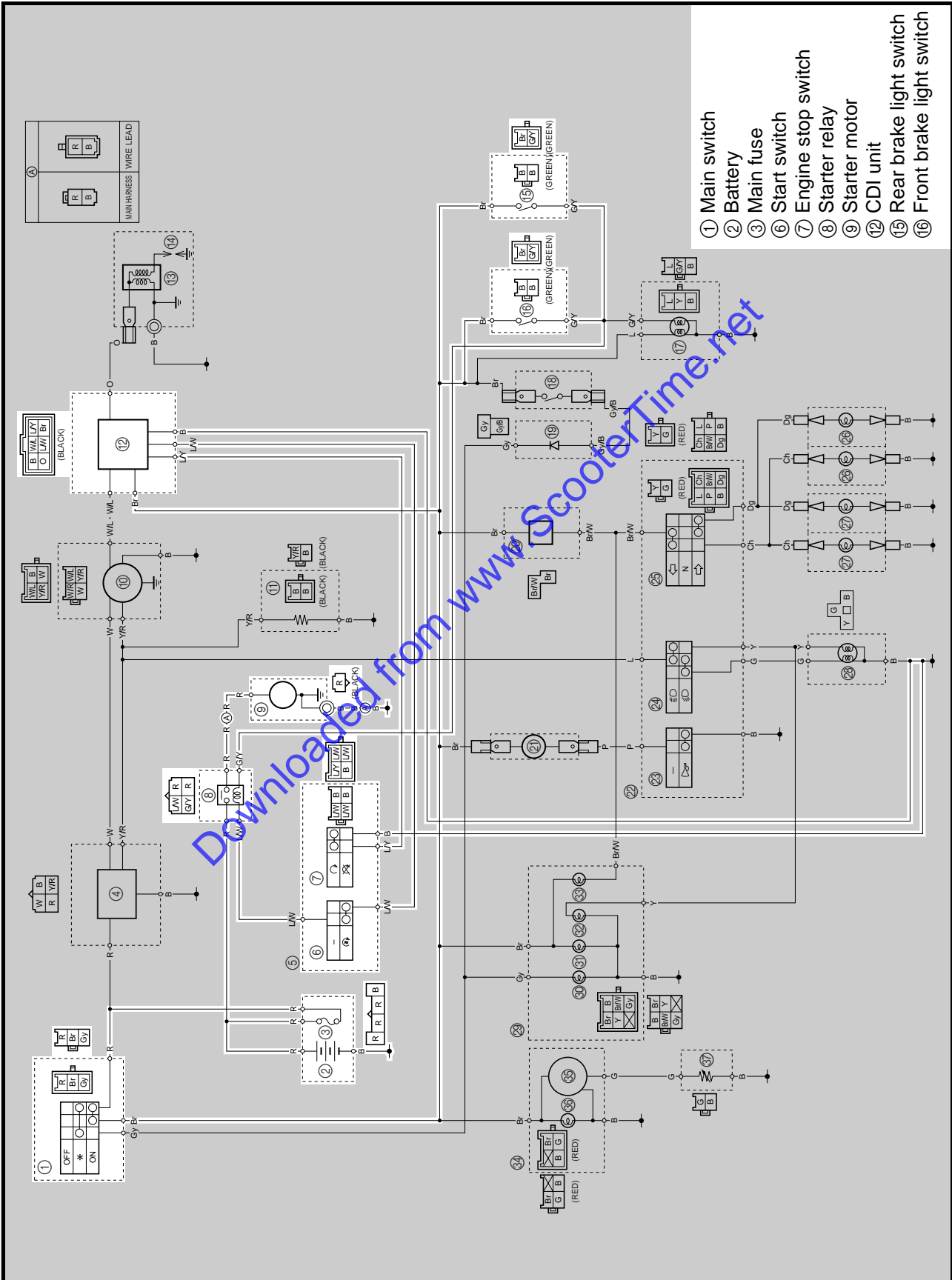
Replace the ignitor unit.

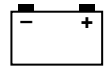
Properly connect or repair the ignition system's wiring.

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EAS00755

ELECTRIC STARTING SYSTEM CIRCUIT DIAGRAM





EAS00757

TROUBLESHOOTING

The starter motor fails to turn.

Check:

1. main fuse
2. battery
3. starter motor
4. starter relay
5. main switch
6. engine stop switch
7. start switch
8. front brake light switch
9. rear brake light switch
10. wiring (of the entire starting system)

NOTE:

- Before troubleshooting, remove the following part(s):
 - 1) center cover
 - 2) side cover (left)
 - 3) side cover (right)
 - 4) front panel
 - 5) leg shield
- Troubleshoot with the following special tool(s).



**Pocket tester
YU-03112**

EAS00738

1. Main fuse

- Check the main fuse for continuity. Refer to "CHECKING THE FUSE" in chapter 3.
- Is the main fuse OK?



Replace the main fuse.

EAS00739

2. Battery

- Check the condition of the battery. Refer to "CHECKING AND CHARGING THE BATTERY" in chapter 3.



**Minimum open-circuit voltage
12.8 V or more at 20 °C (68 °F)**

- Is the battery OK?

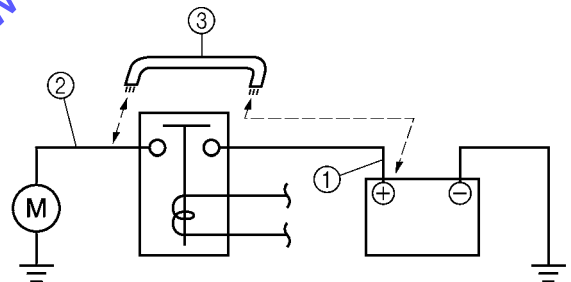


- Clean the battery terminals.
- Recharge or replace the battery.

EAS00758

3. Starter motor

- Connect the positive battery terminal ① and starter motor lead ② with a jumper lead ③.



18210801

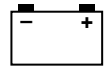
⚠ WARNING

- A wire that is used as a jumper lead must have at least the same capacity or more as that of the battery lead, otherwise the jumper lead may burn.
- This check is likely to produce sparks, therefore make sure nothing flammable is in the vicinity.

- Does the starter motor turn?



Repair or replace the starter motor.



EAS00761

4. Starter relay

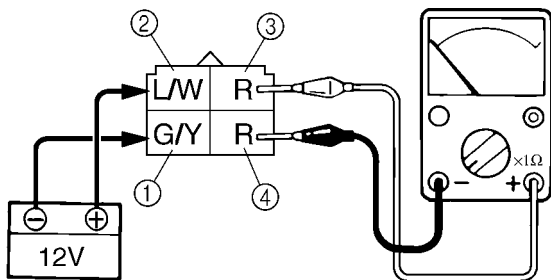
- Remove the starter relay from the wire harness.
- Connect the pocket tester ($\Omega \times 1$) and battery (12 V) to the starter relay coupler as shown.

Negative battery terminal → green/yellow ①

Positive battery terminal → blue/white ②

Positive tester probe → red ③

Negative tester probe → red ④



- Does the starter relay have continuity between red and black?

↓ YES

↓ NO

Replace the starter relay.

EAS00749

5. Main switch

- Check the main switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the main switch OK?

↓ YES

↓ NO

Replace the main switch.

EAS00750

6. Engine stop switch

- Check the engine stop switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the engine stop switch OK?

↓ YES

↓ NO

Replace the right handlebar switch.

EAS00764

7. Start switch

- Check the start switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the start switch OK?

↓ YES

↓ NO

Replace the right handlebar switch.

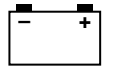
8. Front brake light switch

- Check the front brake light switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the front brake light switch OK?

↓ YES

↓ NO

Replace the front brake light switch.



9. Rear brake light switch

- Check the rear light switch for continuity. Refer to "CHECKING THE SWITCHES"
- Is the rear brake light switch OK?



Replace the rear brake light switch.

EAS00766

10. Wiring

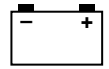
- Check the entire starting system's wiring. Refer to "CIRCUIT DIAGRAM".
- Is the starting system's wiring properly connected and without defects?



The starting system circuit is OK.

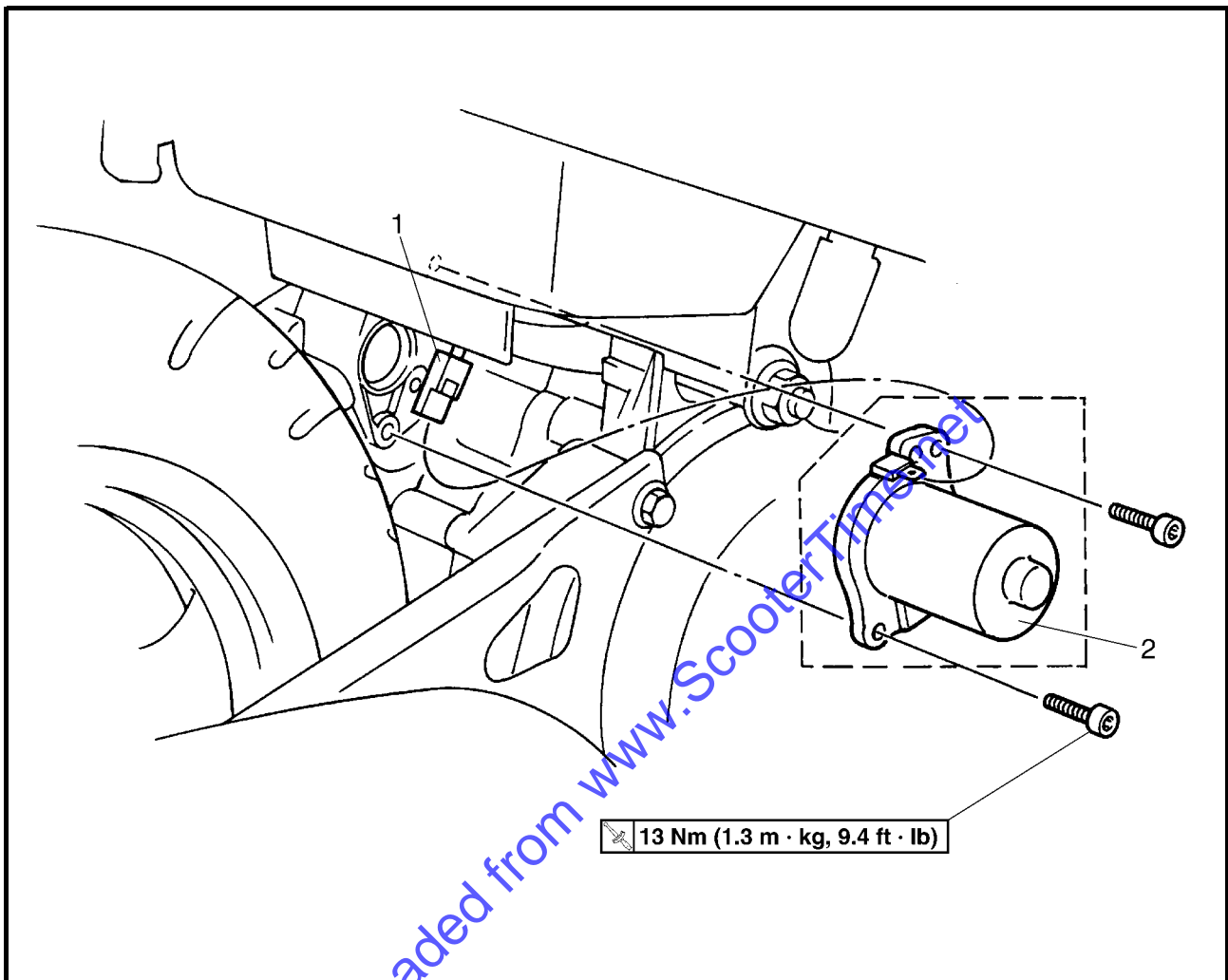
Properly connect or repair the starting system's wiring.

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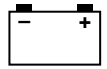


EAS00767

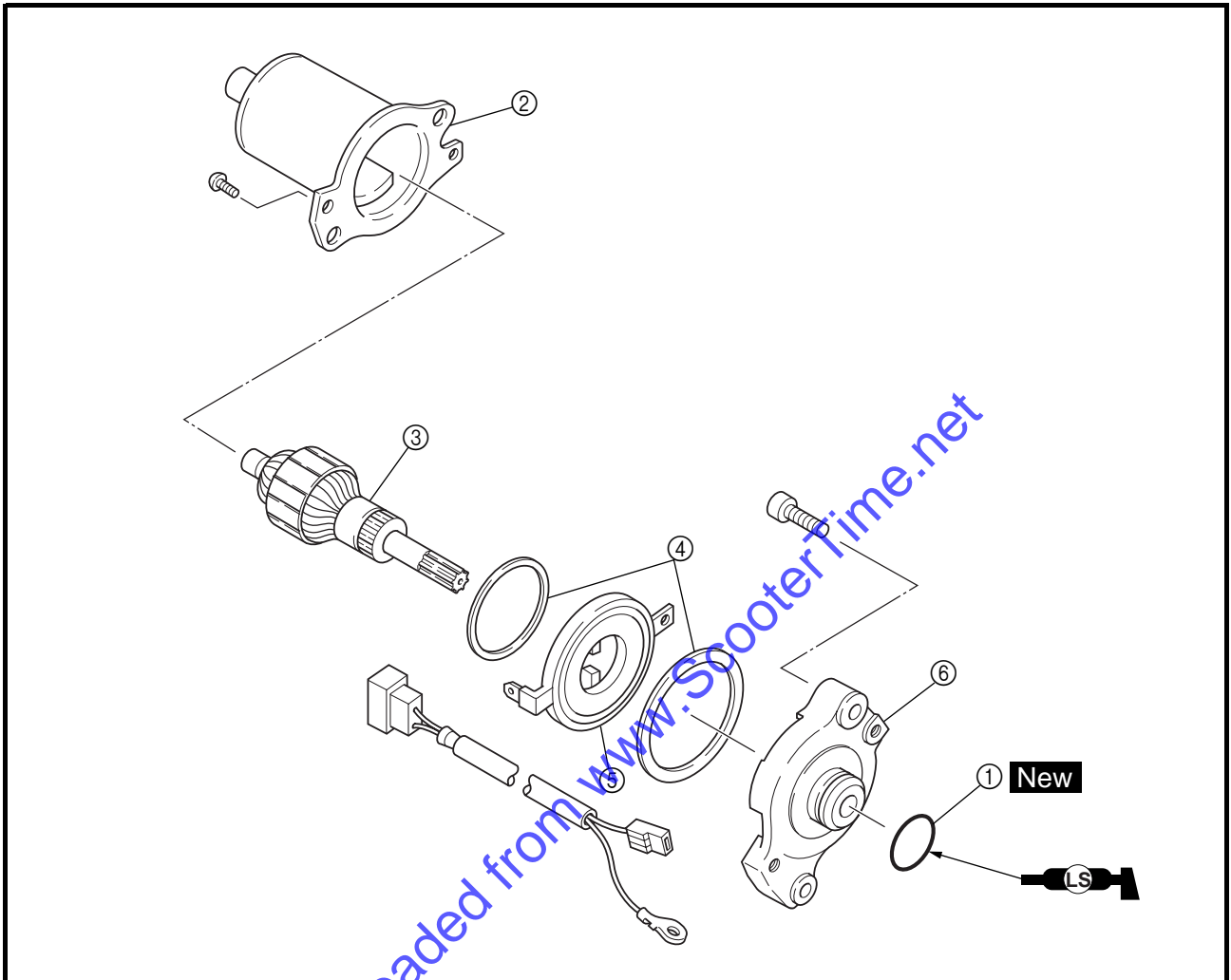
STARTER MOTOR



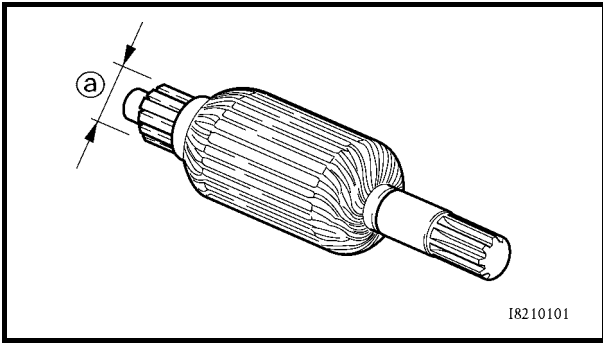
Order	Job/Part	Q'ty	Remarks
	Removing the starter motor		
	Air shroud		Remove the parts in the order listed. Refer to "CYLINDER HEAD, CYLINDER AND PISTON" in chapter 5.
1	Starter motor coupler	1	
2	Starter motor assembly	1	
			For installation, reverse the removal procedure.



EAS00768




Order	Job/Part	Q'ty	Remarks
	Disassembling the starter motor		Remove the parts in the order listed.
①	O-ring	1	
②	Starter motor yoke	1	
③	Armature assembly	1	
④	Gasket	2	
⑤	Brush holder	1	
⑥	Starter motor cover	1	
			For assembly, reverse the disassembly procedure.

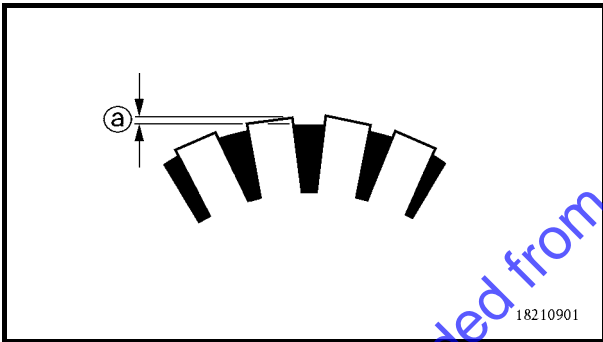


EAS00769


CHECKING THE STARTER MOTOR

1. Check:
 - commutator
Dirt → Clean with 600-grit sandpaper.
2. Measure:
 - commutator diameter @
Out of specification → Replace the starter motor.

	Commutator wear limit 14.8 mm (0.58 in)
---	---



3. Measure:
 - mica undercut @
Out of specification → Scrape the mica to the proper measurement with a hacksaw blade that has been grounded to fit the commutator.

	Mica undercut 1.15 mm (0.05 in)
---	---

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

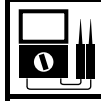
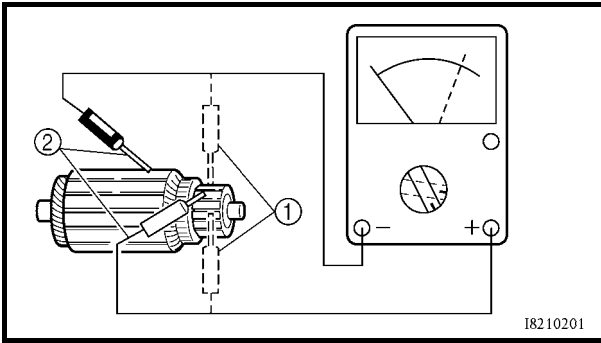
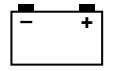
4. Measure:
 - armature assembly resistances (commutator and insulation)
Out of specification → Replace the starter motor.

- ▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼ ▼▼▼▼
- a. Measure the armature assembly resistances with the pocket tester.

	Pocket tester YU-03112
---	----------------------------------

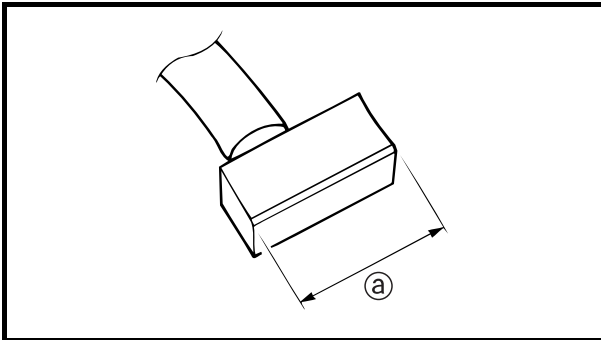
STARTER MOTOR

ELEC



Armature coil
Commutator resistance ①
 0.065 ~ 0.079 Ω at 20 °C (68 °F)
Insulation resistance ②
 Above 1 MΩ at 20 °C (68 °F)

b. If any resistance is out of specification, replace the starter motor.



5. Measure:

- brush length **a**
 Out of specification → Replace the brushes as a set.



Brush length wear limit
 0.9 mm (0.04 in)

6. Measure:

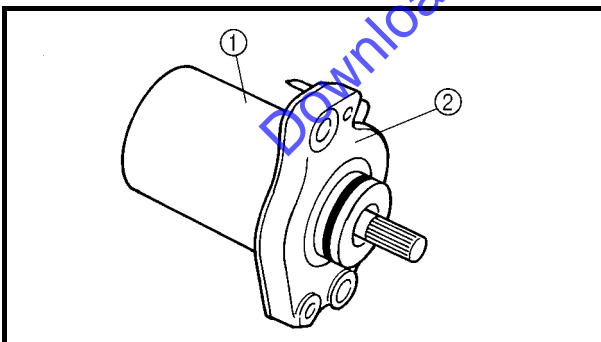
- brush spring force
 Out of specification → Replace the brush springs as a set.



Brush spring force
 2.32 ~ 3.48 N
 (236.5 ~ 355.0 gf, 8.35 ~ 12.53 oz)

7. Check:

- gear teeth
 Damage/wear → Replace the gear.

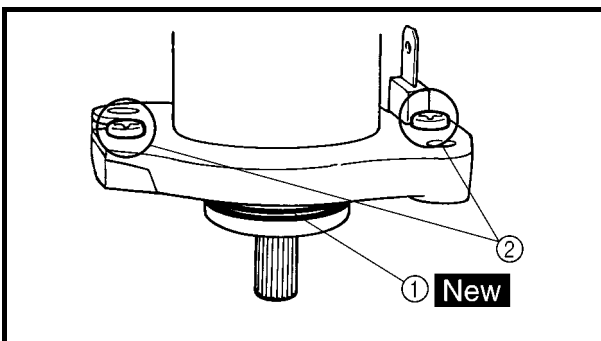


EAS00772

ASSEMBLING THE STARTER MOTOR

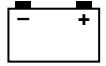
1. Install:

- starter motor yoke ①
- starter motor cover ②



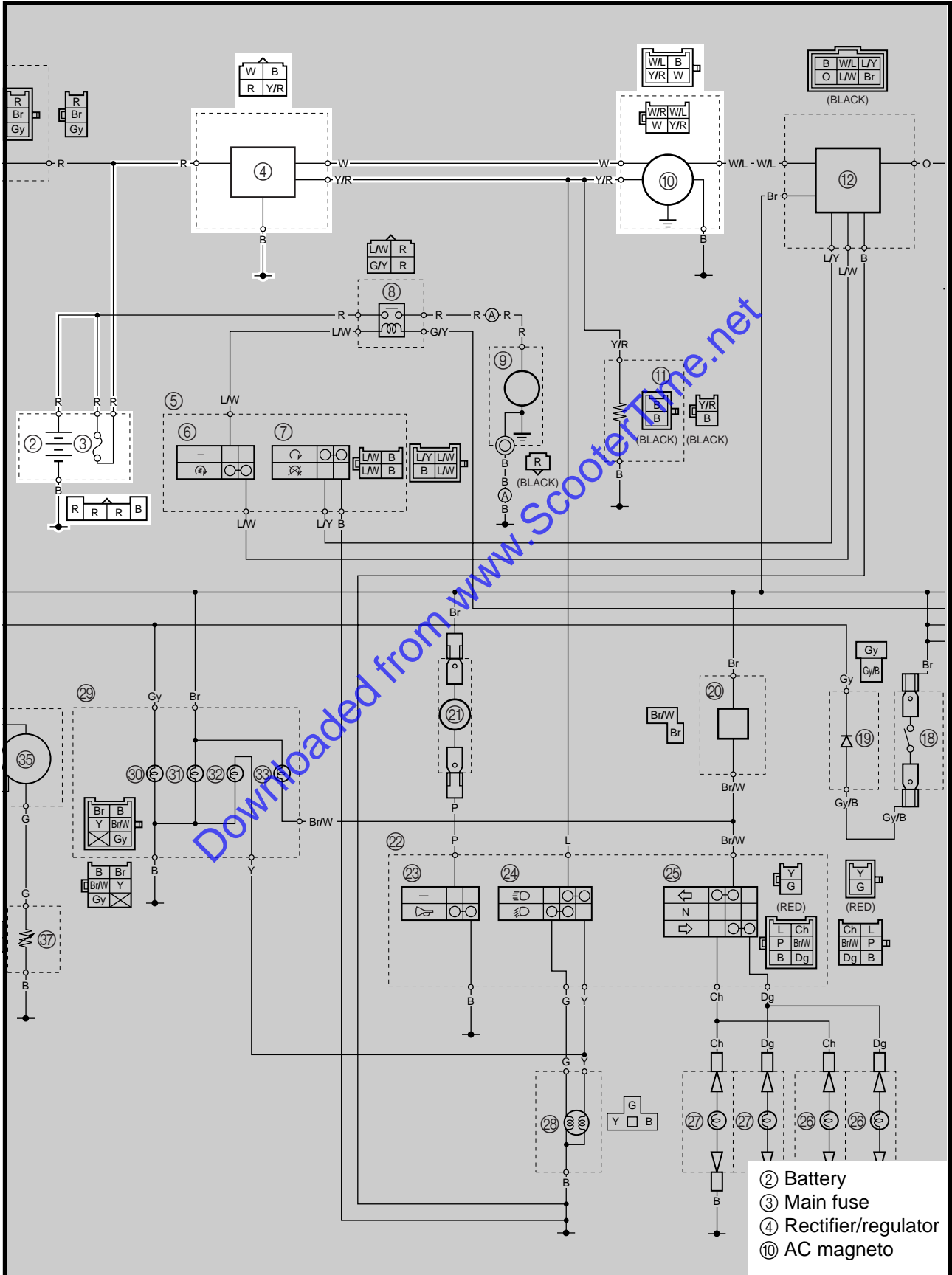
3. Install:

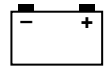
- O-ring ① **New**
- screws ② **2.5 Nm (0.25 m · kg, 1.7 ft · lb)**



EAS00773

CHARGING SYSTEM
CIRCUIT DIAGRAM





EAS00774

TROUBLESHOOTING

The battery is not being charged.

Check:

1. main fuse
2. battery
3. charging voltage
4. wiring (of the entire charging system)

NOTE:

- Before troubleshooting, remove the following part(s):
 - 1) center cover
 - 2) side cover (left)
 - 3) side cover (right)
- Troubleshoot with the following special tool(s).

**Inductive tachometer
YU-8036-A**
**Pocket tester
YU-03112**

EAS00738

1. Main fuse

- Check the main fuse for continuity. Refer to "CHECKING THE FUSE" in chapter 3.
- Is the main fuse OK?



Replace the main fuse.

EAS00739

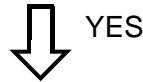
2. Battery

- Check the condition of the battery. Refer to "CHECKING AND CHARGING THE BATTERY" in chapter 3.



**Minimum open-circuit voltage
12.8 V or more at 20°C (68°F)**

- Is the battery OK?



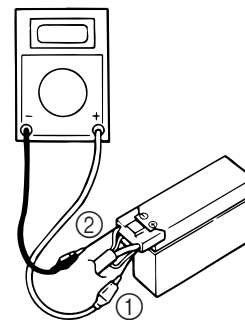
- Clean the battery terminals.
 - Recharge or replace the battery.

EAS00775

3. Charging voltage

- Connect the inductive tachometer to the spark plug lead.
- Connect the pocket tester (DC 20 V) to the battery as shown.

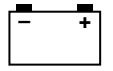
Positive tester probe → positive battery terminal ①
Negative tester probe → negative battery terminal ②



- Start the engine and let it run at approximately 5,000 r/min.
- Measure the charging voltage.



**Charging voltage
14 V at 5,000 r/min**



NOTE: _____

Make sure the battery is fully charged.

- Is the charging voltage within specification?



The charging circuit is OK.

EAS0079

4. Wiring

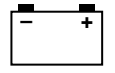
- Check the wiring connections of the entire charging system. Refer to "CIRCUIT DIAGRAM".
- Is the charging system's wiring properly connected and without defects?



Replace the rectifier/regulator.

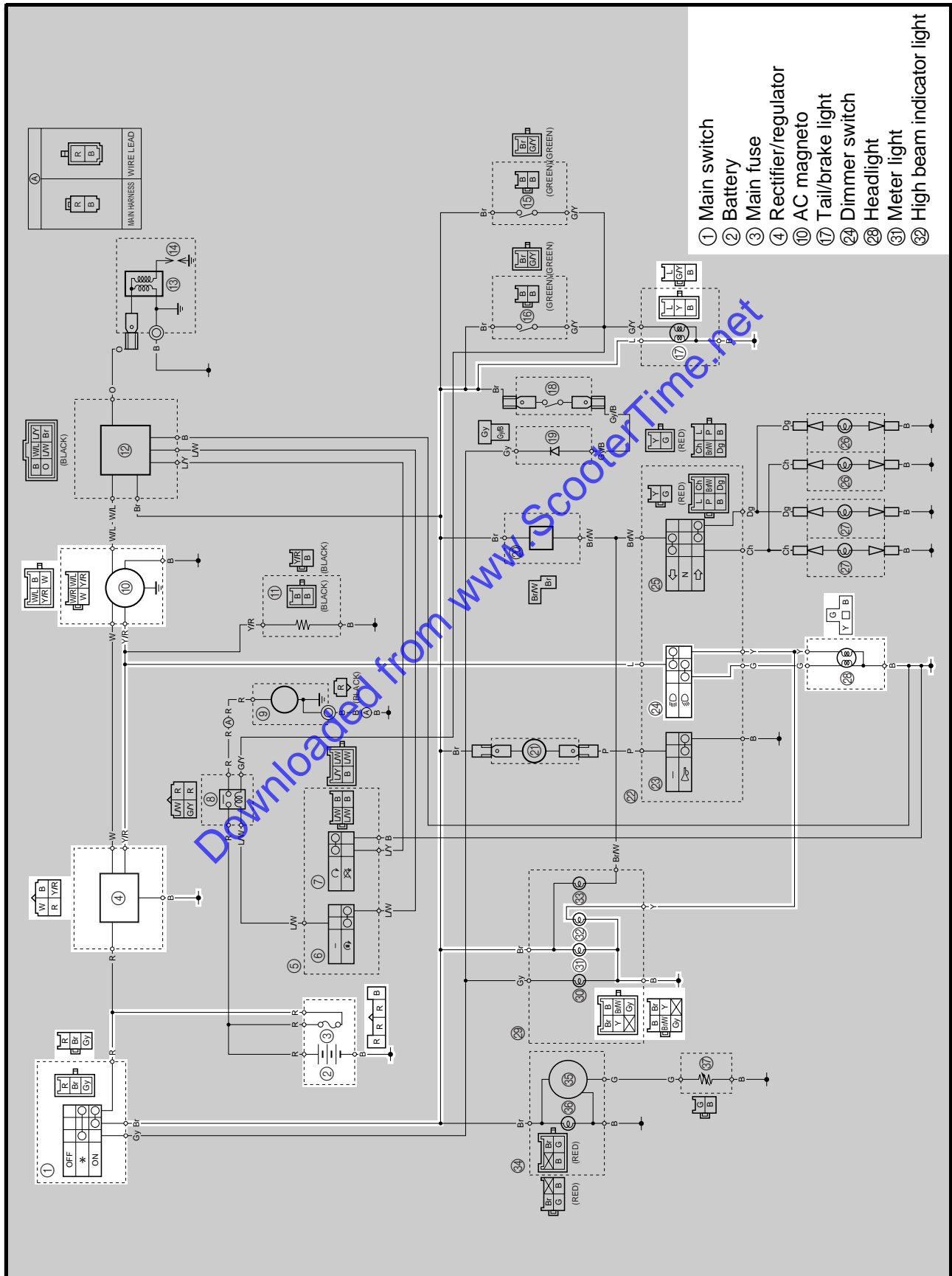
Properly connect or repair the charging system's wiring.

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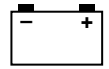


EAS00780

LIGHTING SYSTEM
CIRCUIT DIAGRAM



- ① Main switch
- ② Battery
- ③ Main fuse
- ④ Rectifier/regulator
- ⑩ AC magneto
- ⑰ Tail/brake light
- ⑳ Dimmer switch
- ㉘ Headlight
- ㉛ Meter light
- ㉜ High beam indicator light



EAS00782

TROUBLESHOOTING

Any of the following fail to light: Headlight, high beam indicator light, taillight, auxiliary light, and meter light.

Check:

1. main fuse
2. battery
3. main switch
4. dimmer switch
5. wiring (of the entire charging system)

NOTE:

- Before troubleshooting, remove the following part(s):
 - 1) center cover
 - 2) side cover (left)
 - 3) side cover (right)
 - 4) tail cover
 - 5) headlight cover
 - 6) front panel
- Troubleshoot with the following special tool(s).



**Pocket tester
YU-03112**

EAS00738

1. Main fuse

- Check the main fuse for continuity. Refer to "CHECKING THE FUSE" in chapter 3.
- Is the main fuse OK?

↓ YES

↓ NO

Replace the main fuse.

EAS00739

2. Battery

- Check the condition of the battery. Refer to "CHECKING AND CHARGING THE BATTERY" in chapter 3.



**Minimum open-circuit voltage
12.8 V or more at 20°C (68°F)**

- Is the battery OK?

↓ YES

↓ NO

- Clean the battery terminals.
- Recharge or replace the battery.

EAS00749

3. Main switch

- Check the main switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the main switch OK?

↓ YES

↓ NO

Replace the main switch.

EAS00785

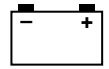
4. Dimmer switch

- Check the dimmer switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the dimmer switch OK?

↓ YES

↓ NO

The dimmer switch is faulty. Replace the left handlebar switch.



EAS00787

5. Wiring

- Check the entire lighting system's wiring. Refer to "CIRCUIT DIAGRAM".
- Is the lighting system's wiring properly connected and without defects?

↓ YES

↓ NO

Check the condition of each of the lighting system's circuits. Refer to "CHECKING THE LIGHTING SYSTEM".

Properly connect or repair the lighting system's wiring.

EAS00788

CHECKING THE LIGHTING SYSTEM

1. The headlight and the high beam indicator light fail to come on.

1. Headlight bulb and socket

- Check the headlight bulb and socket for continuity.
- Are the headlight bulb and socket OK?

↓ YES

↓ NO

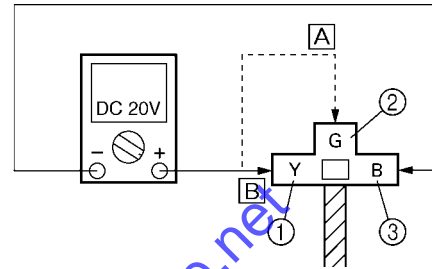
Replace the headlight bulb, socket or both.

2. Voltage

- Connect the pocket tester (DC 20 V) to the headlight and high beam indicator light couplers as shown.

- Ⓐ When the dimmer switch is set to "☰".
- Ⓑ When the dimmer switch is set to "☷".

Headlight coupler (wire harness side)



Positive tester probe → yellow ①

Negative tester probe → black ③

Headlight

Positive tester probe →

yellow ① or green ②

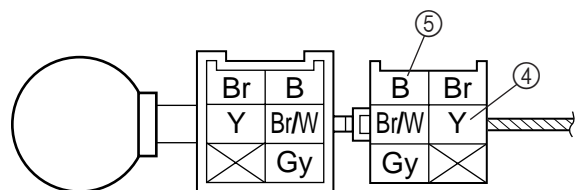
Negative tester probe → black ③

High beam indicator light

Positive tester probe → yellow ④

Negative tester probe → black ⑤

Meter light assembly coupler (wire harness side)

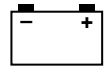


- Set the main switch to "ON".
- Start the engine.
- Set the dimmer switch to "☰" or "☷".
- Measure the voltage (12 V) of green ② on the headlight coupler (wire harness side).
- Is the voltage within specification?

↓ YES

↓ NO

This circuit is OK.



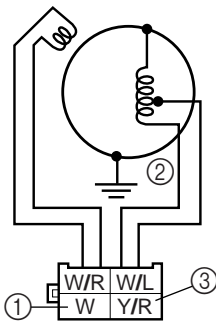
EAS00776

4. Source coil resistance

- Disconnect the stator coil assembly coupler from the wire harness.
- Connect the pocket tester ($\Omega \times 1$) to the source coils as shown.

Positive tester probe → white ①
 Negative tester probe → ground ②

Positive tester probe → yellow/red ③
 Negative tester probe → ground ②



- Measure the source coil resistances.

Stator coil resistance (W-B)
 0.29 ~ 0.43 Ω at 20°C (68°F)

- Is the stator coil OK?

YES

NO

The wiring circuit from the main switch to the headlight coupler is faulty and must be repaired.

Replace the rectifier/regulator.

EAS00789

2. The meter light fails to come on.

1. Meter light bulb and socket

- Check the meter light bulb and socket for continuity.
- Are the meter light bulb and socket OK?

YES

NO

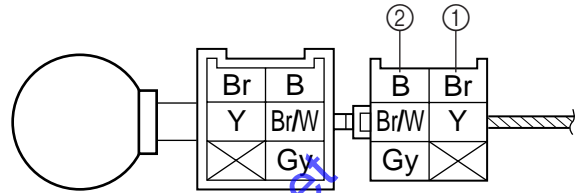
Replace the meter light bulb, socket or both.

2. Voltage

- Connect the pocket tester (20 V) to the meter light coupler (wire harness side) as shown.

Positive tester probe → brown ①
 Negative tester probe → black ②

Meter light assembly coupler



- Set the main switch to "ON".
- Measure the voltage (12 V) of brown ① on the meter light coupler (wire harness side).
- Is the voltage within specification?

YES

NO

This circuit is OK.

The wiring circuit from the main switch to the meter light coupler is faulty and must be repaired.

EAS00790

3. The tail/brake light fails to come on.

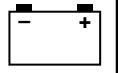
1. Tail/brake light bulb and socket

- Check the tail/brake light bulb and socket for continuity.
- Are the tail/brake light bulb and socket OK?

YES

NO

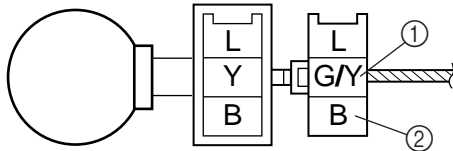
Replace the tail/brake light bulb, socket or both.



2. Voltage

- Connect the pocket tester (DC 20 V) to the tail/brake light coupler (wire harness side) as shown.

Positive tester probe → blue ①
Negative tester probe → black ②



- Set the main switch to “ON”.
- Measure the voltage (12 V) of blue ① on the tail/brake light coupler (tail/brake light side).
- Is the voltage within specification?

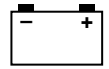
↓ YES

↓ NO

This circuit is OK.

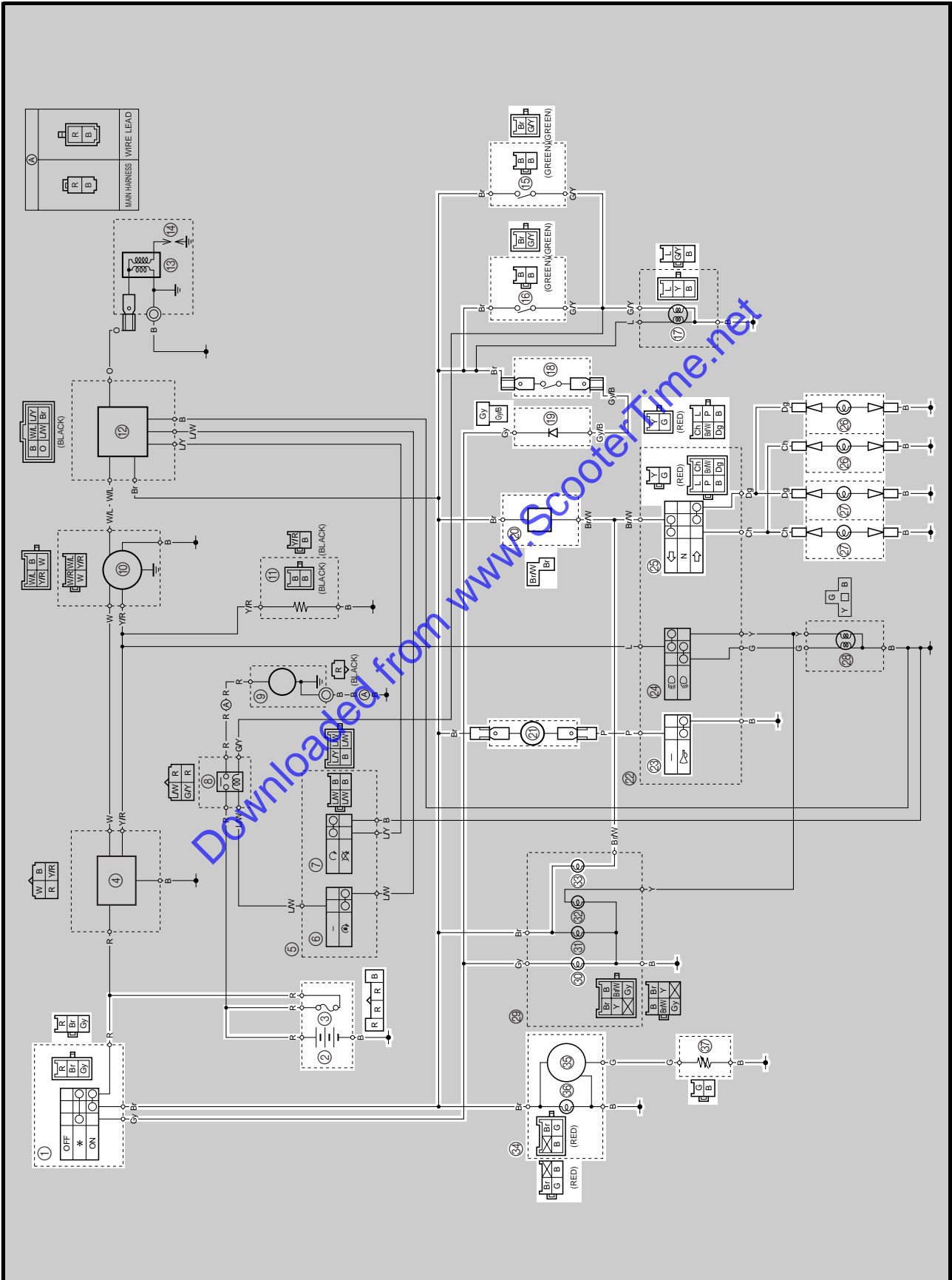
The wiring circuit from the main switch to the tail/brake light coupler is faulty and must be repaired.

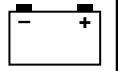
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EAS00793

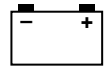
SIGNALING SYSTEM
CIRCUIT DIAGRAM





- ① Main switch
- ② Battery
- ③ Main fuse
- ⑮ Rear brake light switch
- ⑯ Front brake light switch
- ⑰ Tail/brake light
- ⑱ Oil level gauge
- ⑲ Diode
- ⑳ Turn signal relay
- ㉑ Horn
- ㉓ Horn switch
- ㉕ Turn signal switch
- ㉖ Rear turn signal light
- ㉗ Front turn signal light
- ㉙ Oil level warning light
- ㉛ Turn signal indicator light
- ㉜ Fuel gauge assembly
- ㉝ Fuel level gauge
- ㉞ Fuel level indicator light
- ㉟ Fuel sender

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EAS00794

TROUBLESHOOTING

- Any of the following fail to light: Flasher light, brake light or an indicator light.
- The horn fails to sound.

Check:

1. main fuse
2. battery
3. main switch
4. wiring (of the entire signaling system)

NOTE:

- Before troubleshooting, remove the following part(s):
 - 1) center cover
 - 2) side cover (left)
 - 3) side cover (right)
 - 4) tail cover
 - 5) headlight cover
 - 6) front panel
- Troubleshoot with the following special tool(s).

	Pocket tester YU-03112
--	---

EAS00738

1. Main fuse

- Check the main fuse for continuity.
- Refer to "CHECKING THE FUSE" in chapter 3.
- Is the main fuse OK?

↓ YES

↓ NO

Replace the main fuse.

EAS00739

2. Battery

- Check the condition of the battery. Refer to "CHECKING AND CHARGING THE BATTERY" in chapter 3.



Minimum open-circuit voltage
12.8 V or more at 20 °C (68 °F)

Is the battery OK?

↓ YES

↓ NO

- Clean the battery terminals.
- Recharge or replace the battery.

EAS00749

3. Main switch

- Check the main switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the main switch OK?

↓ YES

↓ NO

Replace the main switch.

EAS00795

4. Wiring

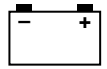
- Check the entire signal system's wiring. Refer to "CIRCUIT DIAGRAM".
- Is the signaling system's wiring properly connected and without defects?

↓ YES

↓ NO

Check the condition of each of the signaling system's circuits. Refer to "CHECKING THE SIGNALING SYSTEM".

Properly connect or repair the signaling system's wiring.



EAS00796

CHECKING THE SIGNALING SYSTEM

1. The horn fails to sound.

1. Horn switch

- Check the horn switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the horn switch OK?

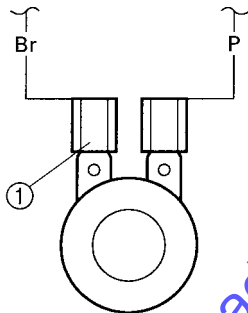


Replace the left handlebar switch.

2. Voltage

- Connect the pocket tester (DC 20 V) to the horn connector at the horn terminal as shown.

Positive tester probe → brown ①
Negative tester probe → ground



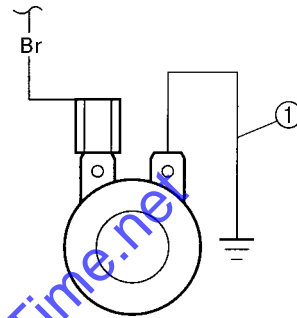
- Set the main switch to "ON".
- Push the horn switch.
- Measure the voltage (12 V) of brown at the horn terminal.
- Is the voltage within specification?



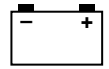
The wiring circuit from the main switch to the horn connector is faulty and must be repaired.

3. Horn

- Disconnect the pink connector at the horn terminal.
- Connect a jumper lead ① to the horn terminal and ground the jumper lead.
- Set the main switch to "ON".
- Push the horn switch.
- Does the horn sound?



The horn is OK.



4. Voltage

- Connect the pocket tester (DC 20 V) to the horn connector at the pink terminal as shown.

Positive tester probe → pink ①
Negative tester probe → ground

- Set the main switch to "ON".
- Measure the voltage (12 V) of pink ① at the horn terminal.
- Is the voltage within specification?

YES NO

Repair or replace the horn.

Replace the horn.

EAS00798

2. The tail/brake light fails to come on

1. Tail/brake light bulb and socket

- Check the tail/brake light bulb and socket for continuity.
- Are the tail/brake light bulb and socket OK?

YES NO

Replace the tail/brake light bulb, socket or both.

2. Brake light switches

- Check the brake light switches for continuity. Refer to "CHECKING THE SWITCHES".
- Is the brake light switch OK?

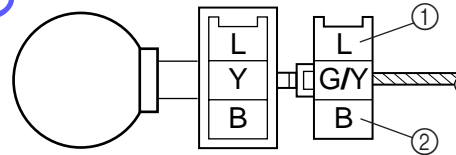
YES NO

Replace the brake light switch.

3. Voltage

- Connect the pocket tester (DC 20 V) to the tail/brake light coupler (wire harness side) as shown.

Positive tester probe → green/yellow ①
Negative tester probe → black ②



- Set the main switch to "ON".
- Pull in the brake levers.
- Measure the voltage (12 V) of green/yellow ① on the tail/brake light coupler (wire harness side).
- Is the voltage within specification?

YES NO

This circuit is OK.

The wiring circuit from the main switch to the tail/brake light coupler is faulty and must be repaired.

EAS00799

3. The turn signal light, turn signal indicator light or both fail to blink.

1. Turn signal indicator light bulb and socket

- Check the turn signal light bulb and socket for continuity. Refer to "CHECKING THE SWITCHES".
- Are the turn signal light bulb and socket OK?

↓ YES

↓ NO

Replace the turn signal light bulb, socket or both.

2. Turn signal switch

- Check the turn signal switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the turn signal switch OK?

↓ YES

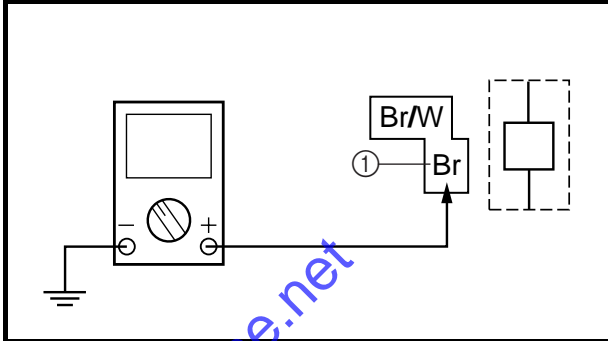
↓ NO

Replace the left handlebar switch.

3. Voltage

- Connect the pocket tester (DC 20 V) to the turn signal relay coupler (wire harness side) as shown.

Positive tester probe → brown ①
Negative tester probe → ground



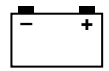
- Set the main switch to "ON".
- Measure the voltage (12 V) on brown ① at the turn signal relay coupler (wire harness side).
- Is the voltage within specification?

↓ YES

↓ NO

The wiring circuit from the main switch to the turn signal relay coupler is faulty and must be repaired.

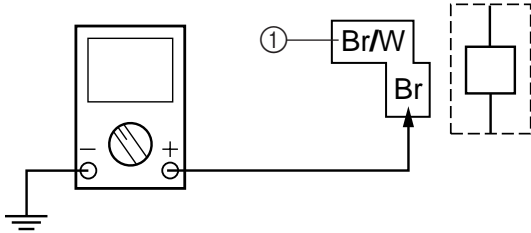
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4. Voltage

- Connect the pocket tester (DC 20 V) to the turn signal relay coupler (wire harness side) as shown.

Positive tester probe → brown/white ①
Negative tester probe → ground



- Set the main switch to "ON".
- Set the turn signal switch to "←" or "→".
- Measure the voltage (12 V) on brown/white ① at the turn signal relay coupler (wire harness side).
- Is the voltage within specification?

↓ YES

↓ NO

The turn signal relay is faulty and must be replaced.

5. Voltage

- Connect the pocket tester (DC 20 V) to the turn signal light connector (wire harness side) as shown.

A Turn signal light

Left turn signal light

Positive tester probe → chocolate ①

Negative tester probe → ground

Right turn signal light

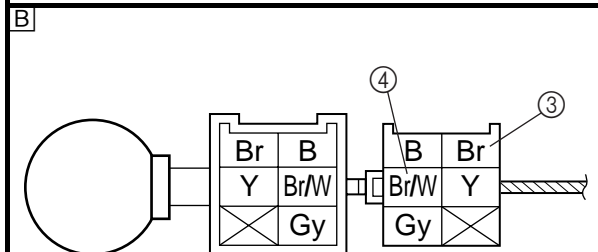
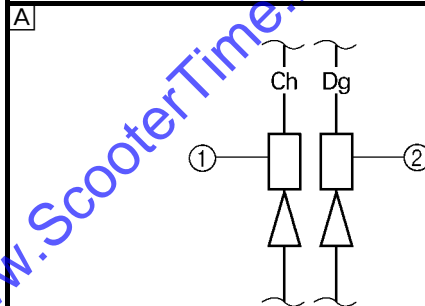
Positive tester probe → dark green ②

Negative tester probe → ground

B Turn signal indicator light

Positive tester probe → brown ③

Negative tester probe → brown/white ④



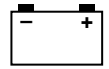
- Set the main switch to "ON".
- Set the turn signal switch to "←" or "→".
- Measure the voltage (12 V) of the chocolate ① or dark green ② at the turn signal light connector (wire harness side).
- Is the voltage within specification?

↓ YES

↓ NO

This circuit is OK.

The wiring circuit from the turn signal switch to the turn signal light connector is faulty and must be repaired.

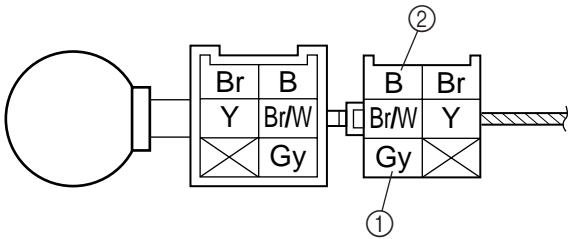


4. Voltage

- Connect the pocket tester (DC 20 V) to the meter assembly coupler (wire harness side) as shown.

Positive tester probe → gray ①

Negative tester probe → black ②



- Set the main switch to "ON".
- Measure the voltage (12 V) of gray ① and black ② at the meter assembly coupler.
- Is the voltage within specification?

YES

NO

This circuit is OK.

The wiring circuit from the main switch to the meter light coupler is faulty and must be repaired.

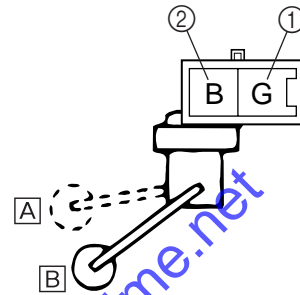
EAS00804

2. Fuel sender

- Remove the fuel sender from the fuel tank.
- Connect the pocket tester to the fuel sender coupler (fuel sender side) as shown.

Positive tester probe → green ①

Negative tester probe → black ②



Fuel sender resistance (up position) A

($\Omega \times 1$)

4 ~ 10 Ω at 20 °C (68 °F)

Fuel sender resistance (down position) B

($\Omega \times 10$)

90 ~ 100 Ω at 20 °C (68 °F)

- Is the fuel sender OK?

YES

NO

Replace the fuel sender.

EAS00803

6. The fuel level indicator light fails to come on.

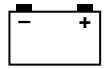
1. Fuel level indicator light bulb and socket

- Check the fuel level indicator light bulb and socket for continuity.
- Are the fuel level indicator light bulb and socket OK?

YES

NO

Replace the fuel level indicator light bulb, socket or both.

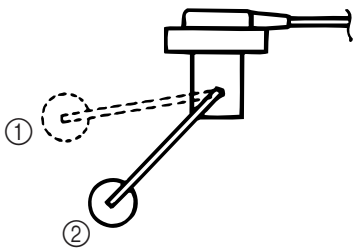


3. Fuel level gauge

- Set the main switch to "ON".
- Move the float up ① or down ②.
- Check that the fuel level gauge needle moves to "F" or "E".

NOTE: _____

Before reading the fuel level meter, leave the float in one position (either up or down) for at least three minutes.



- Does the fuel level gauge needle move appropriately?

↓ YES

↓ NO

Replace the fuel level gauge

4. Voltage

- Connect the pocket tester (DC 20 V) to the fuel level gauge coupler (wire harness side) as shown.

Fuel level gauge

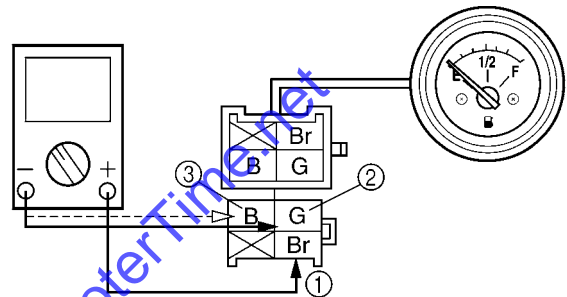
Positive tester probe → brown ①

Negative tester probe → green ②

Fuel level indicator light

Positive tester probe → brown ①

Negative tester probe → black ③



- Set the main switch to "ON".
- Measure the voltage (12 V) of brown ① on the fuel level gauge coupler (wire harness side).
- Is the voltage within specification?

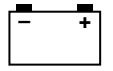
↓ YES

↓ NO

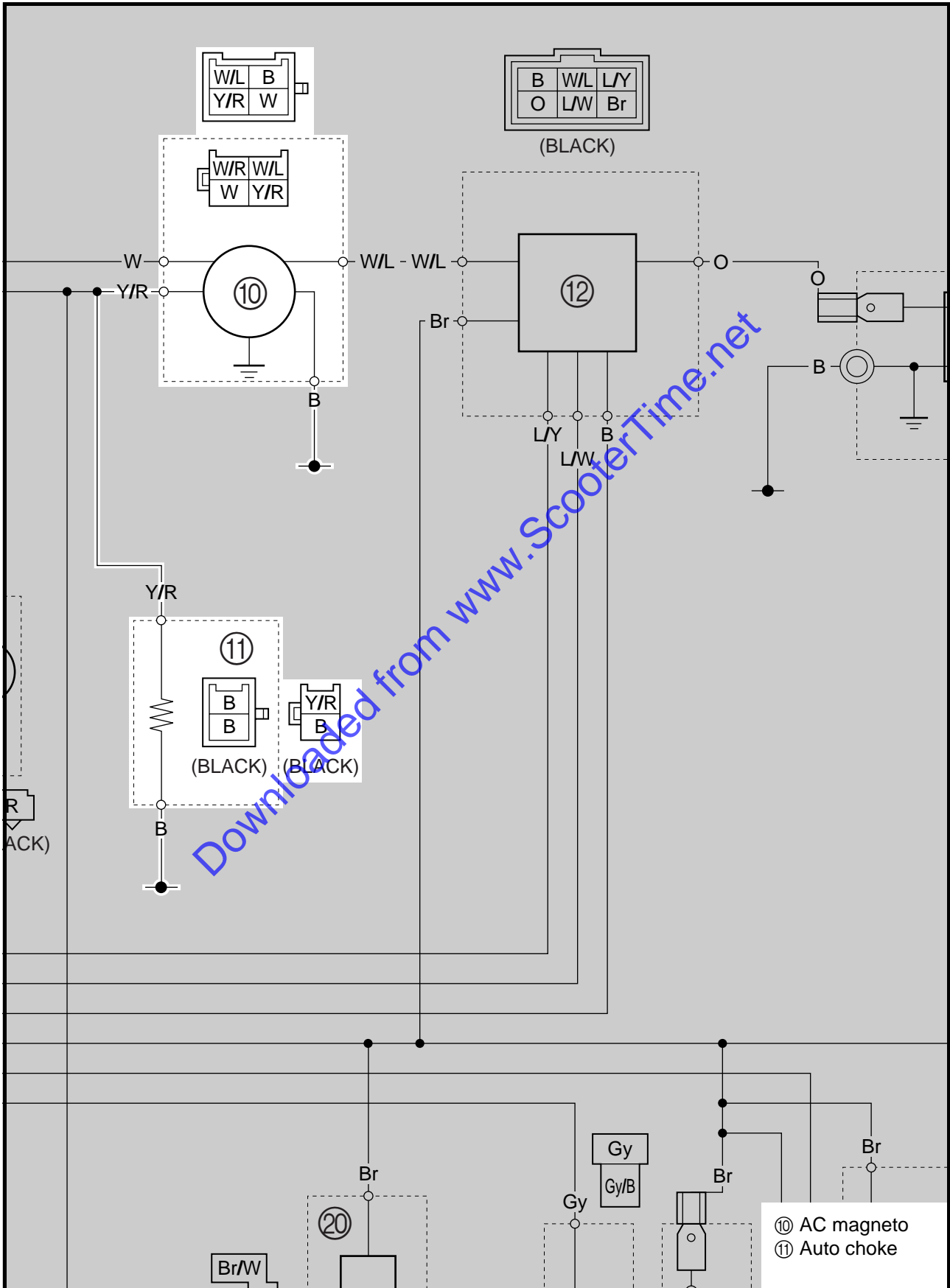
This circuit is OK.

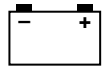
Check the wiring connections of the entire signaling system.

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**AUTO CHOKE SYSTEM
CIRCUIT DIAGRAM**





TROUBLESHOOTING

The auto choke fails to operate

Check:

1. auto choke resistance
2. lighting coil resistance
3. voltage

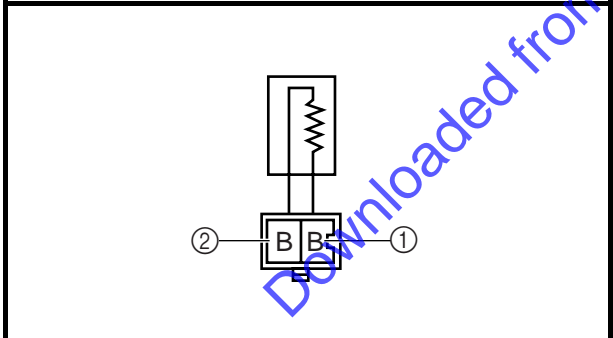
NOTE:

- Before troubleshooting, remove the following part(s):
 - 1) center cover
- Troubleshoot with the following special tool(s).

	Pocket tester YU-03112
--	----------------------------------

<p>1. Auto choke resistance</p> <ul style="list-style-type: none"> • Disconnect the auto choke coupler from the wire harness. • Connect the pocket tester ($\Omega \times 1$) to the auto choke coupler as shown.
--

Tester positive probe → black ①
Tester negative probe → black ②



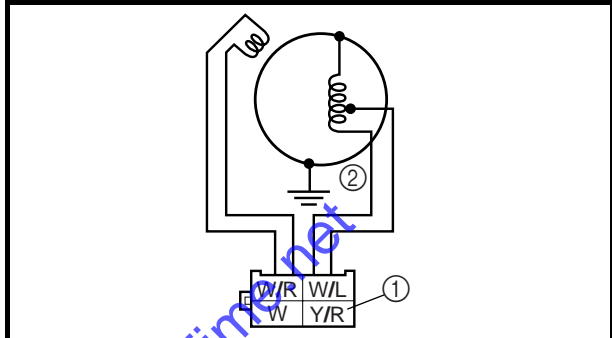
	Auto choke resistance 8 ~ 12 Ω at 20 °C (68 °F)
--	--

• Is the auto choke unit OK?

YES	NO
	Replace the auto choke.

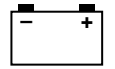
<p>2. Source coil resistance</p> <ul style="list-style-type: none"> • Disconnect the stator coil assembly coupler from wire harness. • Connect the pocket tester ($\Omega \times 1$) to the source coil lead.
--

Tester positive probe → yellow/red ①
Tester negative probe → ground ②



	Source coil resistance 0.18 ~ 0.28 Ω at 20 °C (68 °F)
--	--

YES	NO
	Replace the stator coil assembly.

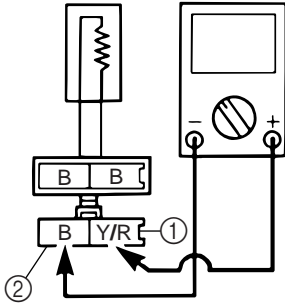


3. Voltage

- Connect the pocket tester (AC 20 V) to the auto choke lead.

Tester positive probe → yellow/red ①

Tester negative probe → black ②



- Set the main switch to "ON".
- Start the engine and accelerate to about 3,000 r/min
- Check the voltage.



Voltage
12.8 V or more at 20 °C (68 °F)

↓ YES

↓ NO

This auto choke is OK.

Check the entire auto choke unit for connection. Refer to the "CIRCUIT DIAGRAM".

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TRBL

SHTG

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CHAPTER 8 TROUBLESHOOTING

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TROUBLESHOOTING

NOTE:

The following guide for troubleshooting does not cover all the possible causes of trouble. It should be helpful, however, as a guide to basic troubleshooting. Refer to the relative procedure in this manual for checks, adjustments, and replacement of parts.

STARTING FAILURE/HARD STARTING

ENGINE

Cylinder and cylinder head

- Loose spark plug
- Loose cylinder head or cylinder
- Damaged cylinder head gasket
- Damaged cylinder gasket
- Worn or damaged cylinder

Piston and piston ring(s)

- Improperly installed piston ring
- Damaged, worn or fatigued piston ring
- Seized piston ring
- Seized or damaged piston

Air filter

- Improperly installed air filter
- Clogged air filter element

Crankcase and crankshaft

- Improperly assembled crankcase
- Seized crankshaft

FUEL SYSTEM

Fuel tank

- Empty fuel tank
- Clogged fuel tank cap breather hole
- Deteriorated or contaminated fuel
- Clogged or damaged fuel hose

Carburetor

- Deteriorated or contaminated fuel
- Clogged pilot jet
- Clogged pilot air passage
- Sucked-in air
- Damaged float
- Worn needle valve
- Improperly installed needle valve seat
- Incorrect fuel level
- Improperly adjusted pilot air screw
- Improperly installed pilot jet
- Clogged starter jet
- Clogged emulsion tube

Autochoke unit

- Faulty starter plunger
- Faulty ignitor unit

ELECTRICAL SYSTEMS

Battery

- Improperly charged battery
- Faulty battery

Fuse

- Blown, damaged or incorrect fuse
- Improperly installed fuse

Spark plug

- Incorrect spark plug gap
- Incorrect spark plug heat range
- Fouled spark plug
- Worn or damaged electrode
- Worn or damaged insulator
- Faulty spark plug cap

Ignition coil

- Broken or shorted primary or secondary coil
- Faulty spark plug lead
- Cracked or broken ignition coil body

Ignition system

- Faulty ignitor unit
- Faulty pickup coil
- Broken generator rotor woodruff key

Switches and wiring

- Faulty main switch
- Faulty engine stop switch
- Broken or shorted wiring
- Faulty front, rear or both brake switches
- Faulty start switch
- Improperly grounded circuit
- Loose connections

Starting system

- Faulty starter motor
- Faulty starter relay
- Faulty starter clutch

EAS00847

INCORRECT ENGINE IDLING SPEED

ENGINE

Air filter

- Clogged air filter element

FUEL SYSTEM

Carburetor

- Faulty starter plunger
- Loose or clogged pilot jet
- Loose or clogged pilot air jet
- Damaged or loose carburetor joint
- Improperly adjusted engine idling speed (throttle stop screw)
- Improper throttle cable free play
- Flooded carburetor

Autochoke unit

- Faulty starter plunger
- Faulty ignitor unit

EAS00848

POOR MEDIUM-AND-HIGH-SPEED PERFORMANCE

Refer to "STARTING FAILURE/HEAD STARTING".

ENGINE

Air filter

- Clogged air filter element

EAS00853

FAULTY CLUTCH

ENGINE OPERATES BUT SCOOTER WILL NOT MOVE

V-belt

- Bent, damaged or worn V-belt
- Slipping V-belt

Primary pulley cam and primary pulley slider

- Damaged or worn primary pulley cam
- Damaged or worn primary pulley slider

Transmission gear(s)

- Damaged transmission gear

CLUTCH SLIPS

Clutch shoe spring(s)

- Damaged, loose or worn clutch shoe spring(s)

Clutch shoe(s)

- Damaged or worn clutch shoe(s)

Primary sliding sheave

- Seized primary sliding sheave

POOR STARTING PERFORMANCE

V-belt

- Slipping V-belt
- Oil or grease on the V-belt

ELECTRICAL SYSTEMS

Battery

- Discharged battery
- Faulty battery

Spark plug

- Incorrect spark plug gap
- Incorrect spark plug heat range
- Fouled spark plug
- Worn or damaged electrode
- Worn or damaged insulator
- Faulty spark plug cap

Ignition coil

- Faulty spark plug lead

Ignition system

- Faulty ignitor unit
- Faulty pickup coil

FUEL SYSTEM

Carburetor

- Faulty diaphragm
- Incorrect fuel level
- Loose or clogged main jet

Primary sliding sheave

- Faulty operation
- Worn pin groove
- Worn pin

Clutch shoe(s)

- Bent, damaged or worn clutch shoe(s)

POOR ACCELERATION PERFORMANCE

V-belt

- Oil or grease on the V-belt

Primary pulley weight(s)

- Faulty operation
- Worn primary pulley weight(s)

Primary fixed sheave

- Worn primary fixed sheave

Primary sliding sheave

- Worn primary sliding sheave

Secondary fixed sheave

- Worn secondary fixed sheave

Secondary sliding sheave

- Worn secondary sliding sheave

EAS00854

OVERHEATING

ENGINE

Cylinder head and piston

- Heavy carbon buildup

Engine oil and transmission oil

- Incorrect oil level
- Incorrect oil viscosity
- Inferior oil quality

FUEL SYSTEM

Carburetor

- Incorrect main jet setting
- Incorrect fuel level
- Damaged or loose carburetor joint

EAS00858

POOR BRAKING PERFORMANCE

- Worn brake shoe lining
- Worn or rusty brake drum
- Incorrect brake lever position
- Incorrect brake lever free play
- Incorrect brake camshaft lever position

EAS00862

UNSTABLE HANDLING

Handlebar

- Bent or improperly installed handlebar

Steering head components

- Improperly installed lower handlebar holder
- Improperly installed fork (improperly tightened ring nut)
- Bent steering stem
- Damaged ball bearing or bearing race

Front shock absorber assembly (-ies)

- Faulty front shock absorber spring(s)
- Leaking oil

Rear shock absorber assembly

- Faulty rear shock absorber spring
- Leaking oil

Air filter

- Clogged air filter element

CHASSIS

Brake(s)

- Dragging brake

ELECTRICAL SYSTEMS

Spark plug

- Incorrect spark plug gap
- Incorrect spark plug heat range

Ignition system

- Faulty ignitor unit

- Incorrect brake shoe position
- Damaged or fatigued brake shoe spring
- Oil or grease on the brake shoe
- Oil or grease on the brake drum
- Broken brake torque rod

Tire(s)

- Uneven tire pressures (front and rear)
- Incorrect tire pressure
- Uneven tire wear

Wheel(s)

- Incorrect wheel balance
- Deformed cast wheel
- Damaged wheel bearing
- Bent or loose wheel axle
- Excessive wheel runout

Frame

- Bent frame
- Damaged steering head pipe
- Improperly installed bearing race

EAS00866

FAULTY LIGHTING OR SIGNALING SYSTEM

HEADLIGHT DOES NOT LIGHT

- Wrong headlight bulb
- Too many electrical accessories
- Hard charging
- Incorrect connection
- Improperly grounded circuit
- Poor contacts (main switch)
- Burnt-out headlight bulb

HEADLIGHT BULB BURNT OUT

- Wrong headlight bulb
- Faulty battery
- Faulty rectifier/regulator
- Improperly grounded circuit
- Faulty main switch
- Headlight bulb life expired

TAIL/BRAKE LIGHT DOES NOT LIGHT

- Wrong tail/brake light bulb
- Too many electrical accessories
- Incorrect connection
- Burnt-out tail/brake light bulb

TAIL/BRAKE LIGHT BULB BURNT OUT

- Wrong tail/brake light bulb
- Faulty battery
- Tail/brake light bulb life expired

TURN SIGNAL DOES NOT LIGHT

- Faulty turn signal switch
- Faulty turn signal relay
- Burnt-out turn signal bulb
- Incorrect connection
- Damaged or faulty wire harness
- Improperly grounded circuit
- Faulty battery
- Blown, damaged or incorrect fuse

TURN SIGNAL BLINKS SLOWLY

- Faulty turn signal relay
- Faulty main switch
- Faulty turn signal switch
- Incorrect turn signal bulb

TURN SIGNAL REMAINS LIT

- Faulty turn signal relay
- Burnt-out turn signal bulb

TURN SIGNAL BLINKS QUICKLY

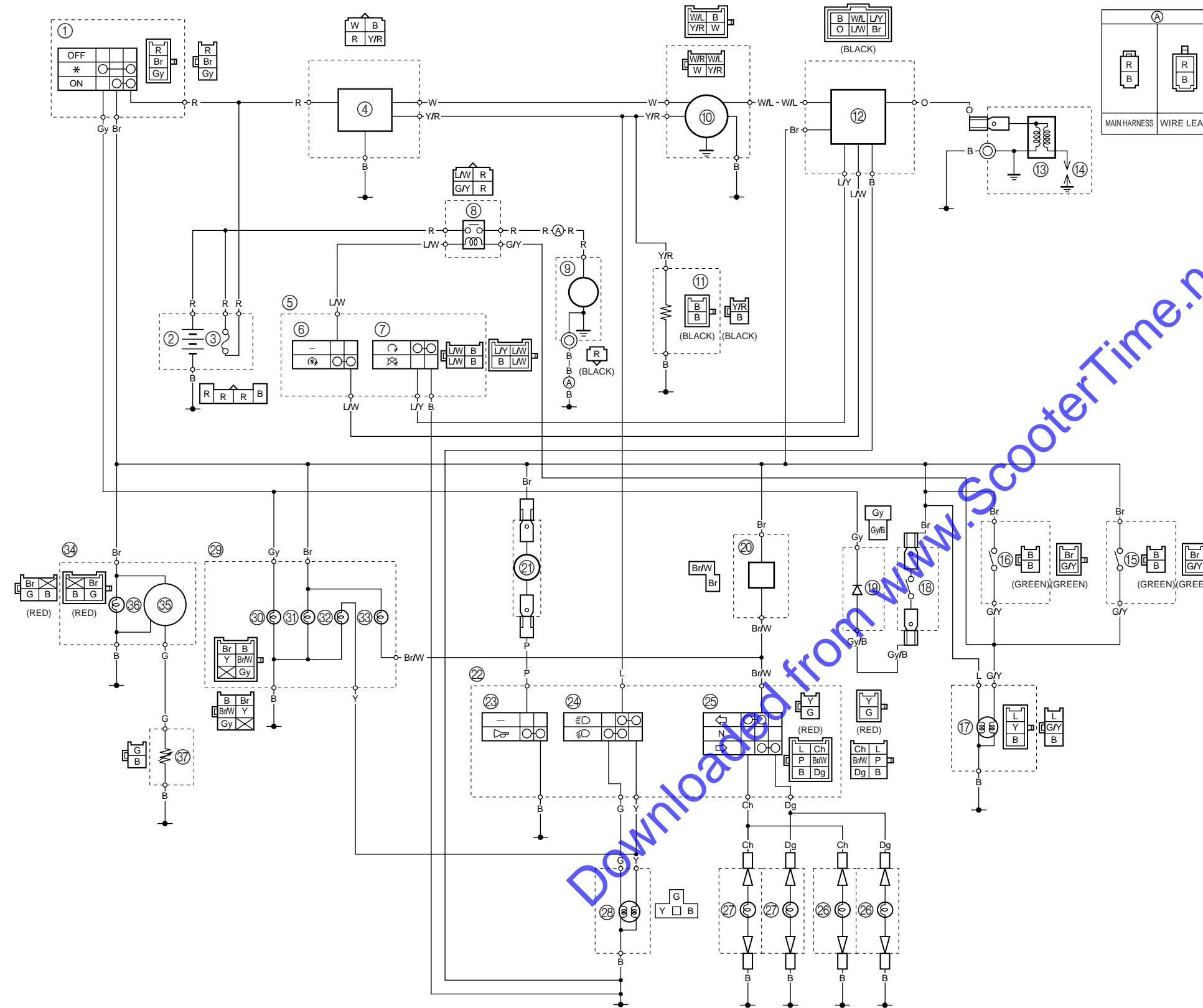
- Incorrect turn signal bulb
- Faulty turn signal relay
- Burnt-out turn signal bulb

HORN DOES NOT SOUND

- Improperly adjusted horn
- Damaged or faulty horn
- Faulty main switch
- Faulty horn switch
- Faulty battery
- Blown, damaged or incorrect fuse
- Faulty wire harness

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YJ50RN WIRING DIAGRAM



- ① Main switch
- ② Battery
- ③ Main fuse
- ④ Rectifier/regulator
- ⑤ Right handlebar switch
- ⑥ Start switch
- ⑦ Engine stop switch
- ⑧ Starter relay
- ⑨ Starter motor
- ⑩ AC magneto
- ⑪ Auto choke
- ⑫ CDI unit
- ⑬ Ignition coil
- ⑭ Spark plug
- ⑮ Rear brake light switch
- ⑯ Front brake light switch
- ⑰ Tail/brake light
- ⑱ Oil level gauge
- ⑲ Diode
- ⑳ Turn signal relay
- ㉑ Horn
- ㉒ Left handlebar switch
- ㉓ Horn switch
- ㉔ Dimmer switch
- ㉕ Turn signal switch
- ㉖ Rear turn signal light
- ㉗ Front turn signal light
- ㉘ Headlight
- ㉙ Meter assembly
- ㉚ Oil level warning light
- ㉛ Meter light
- ㉜ High beam indicator light
- ㉝ Turn signal indicator light
- ㉞ Fuel gauge assembly
- ㉟ Fuel level gauge
- ㊱ Fuel level indicator light
- ㊲ Fuel sender

COLOR CODE

B	black	Gy	gray	W	white	L/W	blue/white
Br	brown	L	blue	Y	yellow	L/Y	blue/yellow
Ch	chocolate	O	orange	Br/W	brown/white	W/L	white/blue
Dg	dark green	P	pink	G/Y	green/yellow	W/R	white/red
G	green	R	red	Gy/B	gray/black	Y/R	yellow/red

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Yamaha Motor Canada Ltd.
480 Gordon Baker Road
Toronto, ON M2H 3B4