YAMAHA

YJ125S

SERVICE MANUAL

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SERVICE MANUAL

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EAS00002

NOTICE

This manual was produced by the Yamaha Motor Taiwan 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 Taiwan 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.

EAS00005

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!

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

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

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

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

HOW TO USE THIS MANUAL

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.

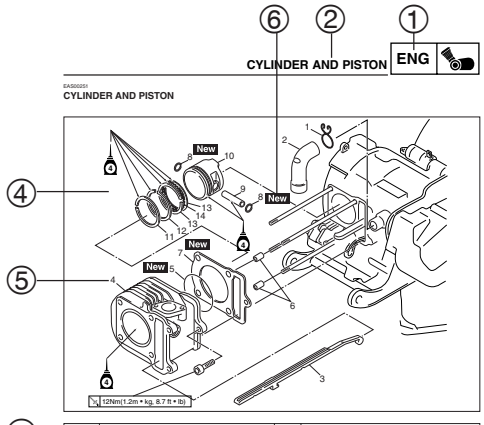
④ To help identify parts and clarify procedure steps, there are exploded diagrams at the start of each removal and disassembly section.

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.

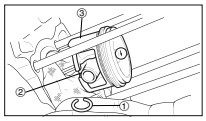
⑧ Jobs requiring more information (such as special tools and technical data) are described sequentially.



CYLINDER AND PISTON ENG

EAS00251
CYLINDER AND PISTON

Order	Job/Part	Q'ty	Remarks
	Removing the cylinder and piston		Remove the parts in the order listed.
	Cylinder head		Refer to “CYLINDER HEAD”.
1	Clamp	1	
2	Pipe	1	
3	Timing chain guide (exhaust side)	1	
4	Cylinder	1	
5	O-ring	1	
6	Dowel pin	2	
7	Cylinder gasket	1	Refer to “ INSTALLING THE PISTON AND CYLINDER”
8	Piston pin clip	2	
9	Piston pin	1	Refer to “ REMOVING THE CYLINDER AND PISTON”
10	Piston	1	
11	Top ring	1	Refer to “ INSTALLING THE PISTON AND CYLINDER”
12	2nd ring	1	
13	Oil ring	2	
14	Expander	1	
			For installation, reverse the removal procedure.



EAS00253
REMOVING THE CYLINDER AND PISTON ③

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

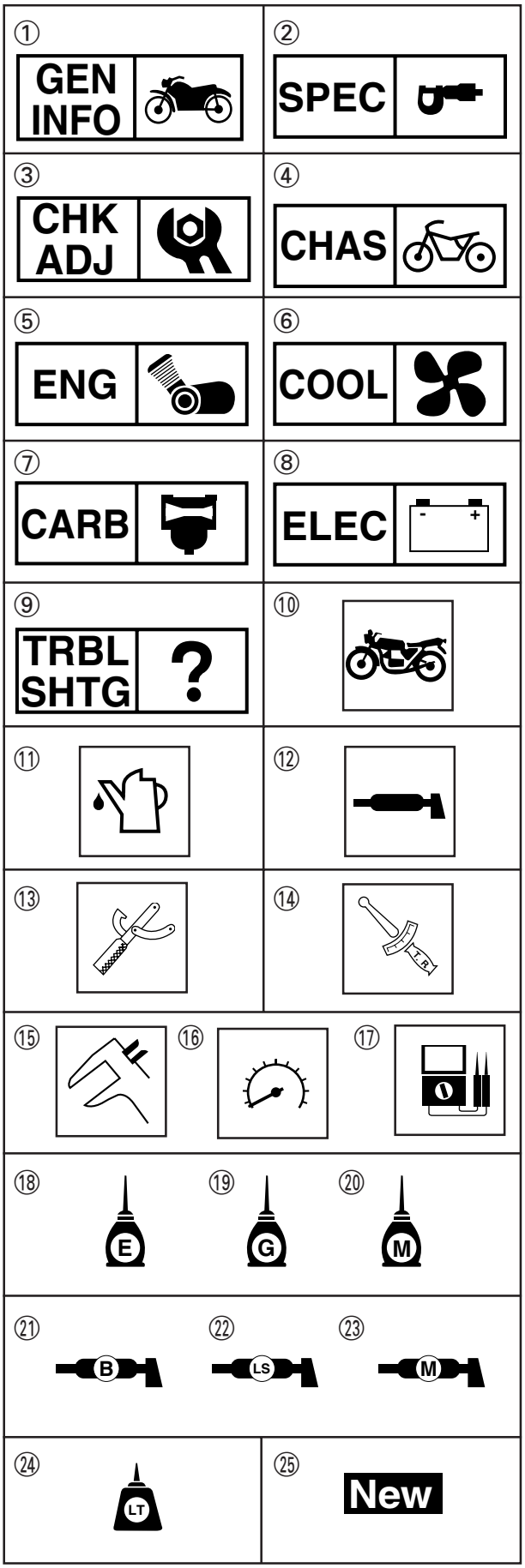
CAUTION:
Do not use a hammer to drive the piston pin out.

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.
- Before removing the piston pin, deburr the piston pin clip's groove and the piston's pin bore area.

2. Remove:
   - top ring
   - 2nd ring
   - oil 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.

⑧



EAS00008

SYMBOLS

The following symbols are not relevant to every vehicle.

Symbols ① to ⑨ indicate the subject of each chapter.

① General information
② Specifications
③ Periodic checks and adjustments
④ Chassis
⑤ Engine
⑥ Cooling system
⑦ Carburetor(s)
⑧ Electrical system
⑨ Troubleshooting

Symbols ⑩ to ⑰ indicate the following.

⑩ Serviceable with engine mounted
⑪ Filling fluid
⑫ Lubricant
⑬ Special tool
⑭ Tightening torque
⑮ Wear limit, clearance
⑯ Engine speed
⑰ Electrical data

Symbols ⑱ to ㉓ in the exploded diagrams indicate the types of lubricants and lubrication points.

⑱ Engine oil
⑲ Gear oil
⑳ Molybdenum-disulfide oil
㉑ Wheel-bearing grease
㉒ Lithium-soap- based grease
㉓ Molybdenum-disulfide grease

Symbols ㉔ to ㉕ in the exploded diagrams indicate the following.

㉔ Apply locking agent (LOCTITE®)
㉕ Replace the part

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CHAPTER 1
GENERAL INFORMATION

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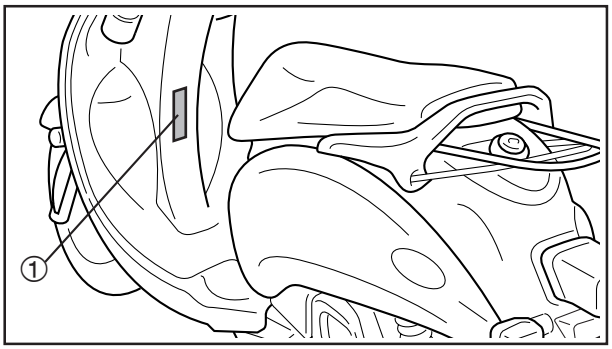


EAS00015

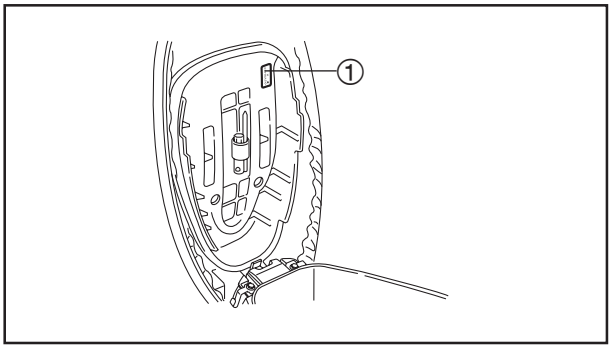
GENERAL INFORMATION

SCOOTER IDENTIFICATION

EAS00017

VEHICLE IDENTIFICATION NUMBER

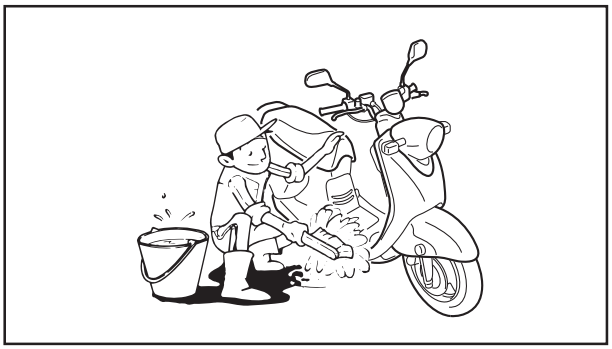
The vehicle identification number ① is stamped into the steering head pipe.



EAS00018

MODEL LABEL

The model label ① is affixed to the seat. This information will be needed to order spare parts.

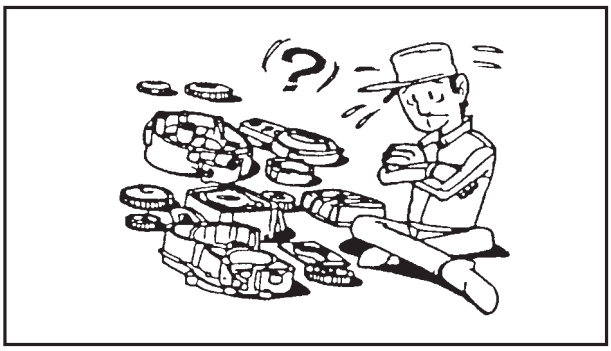


EAS00020

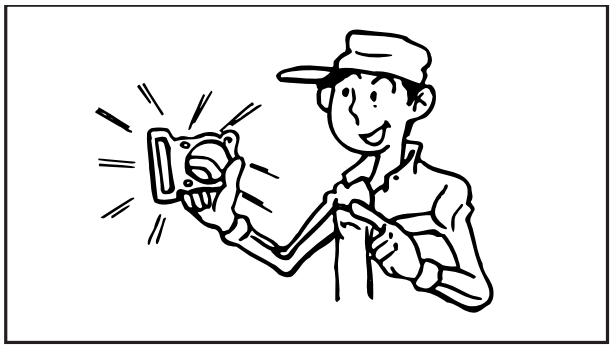
IMPORTANT INFORMATION

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 the “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

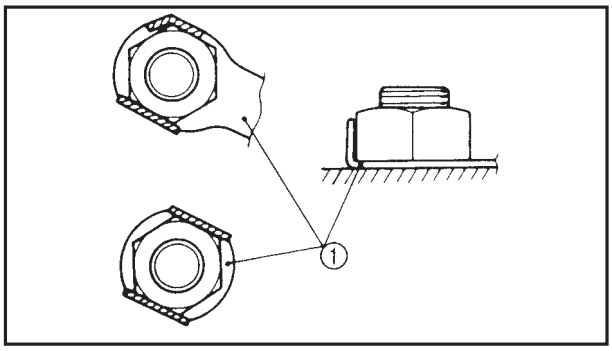
REPLACEMENT PARTS

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.

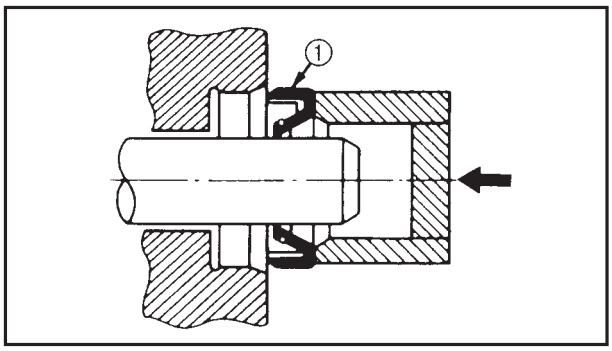
EAS00022

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.

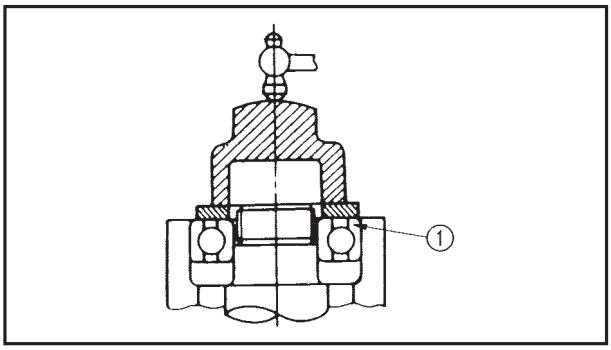


EAS00023
LOCK WASHERS/PLATES AND COTTER PINS
After removal, replace all lock washers/plates ① and cotter pins. After the bolt or nut has been tightened to specification, bend the lock tabs along a flat of the bolt or nut.



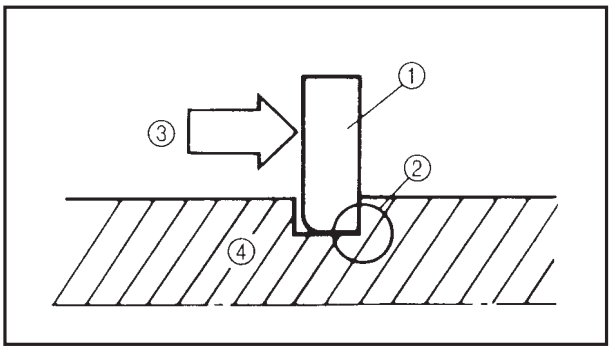
EAS00024
BEARINGS AND OIL SEALS
Install bearings and oil seals so that the manufacturer's marks or numbers are visible. When installing oil seals, lubricate the oil seal lips with a light coat of lithium-soap-based grease. Oil bearings liberally when installing, if appropriate.

① Oil seal



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

① Bearing



EAS00025
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.

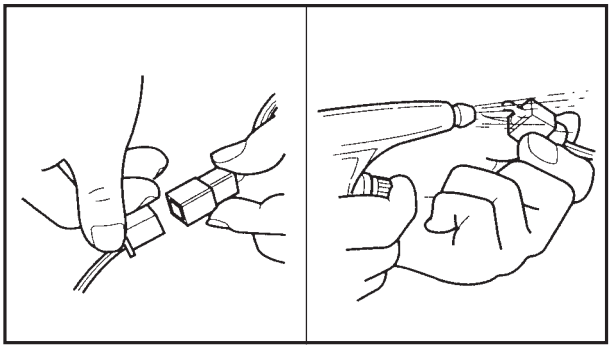
④ Shaft

EAS00026

CHECKING THE CONNECTIONS

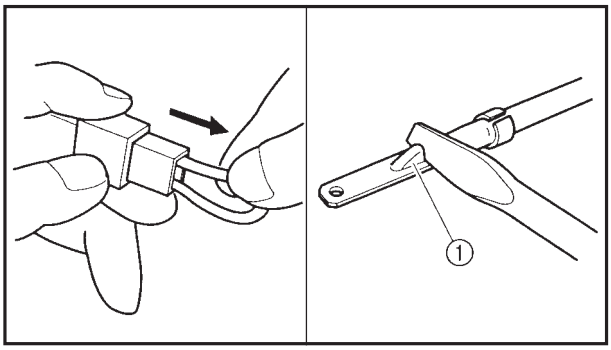
Check the leads, couplers, and connectors for stains, rust, moisture, etc.

1. Disconnect:
   - lead
   - coupler
   - connector



2. Check:
   - lead
   - coupler
   - connector

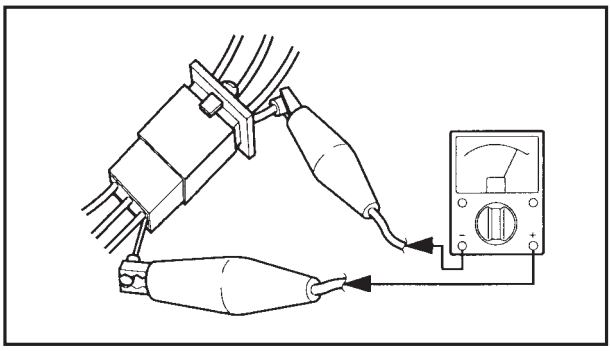
   Moisture → Dry with an air blower.
   Rust/stains → Connect and disconnect several times.



3. Check:
   - all connections

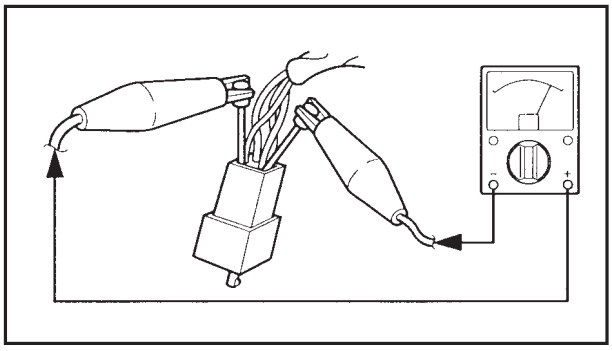
   Loose connection → Connect properly.

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)

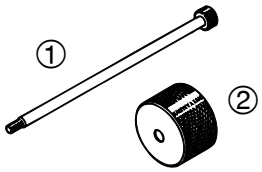
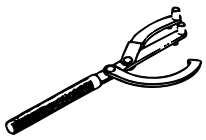
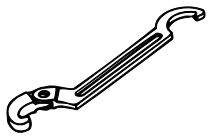
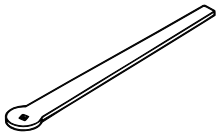
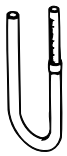
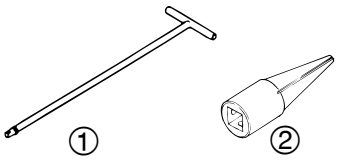
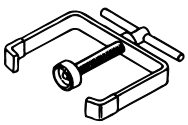
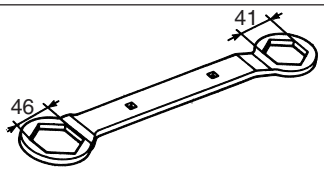
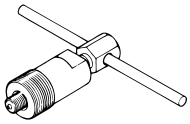
Pocket tester
90890-03132 (YU-03112-C)

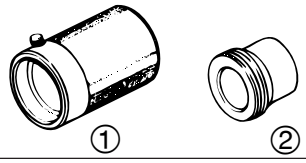
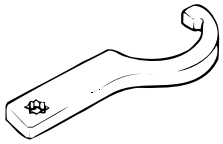
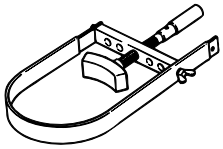
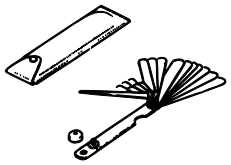
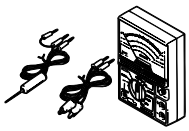
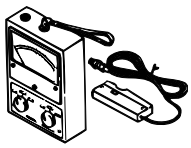
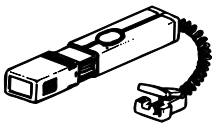
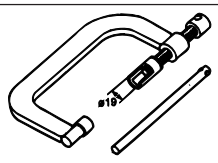
NOTE:
- If there is no continuity, clean the terminals. When checking the wire harness, perform steps (1) to (3).
- As a quick remedy, use a contact revitalizer available at most part stores.

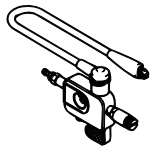
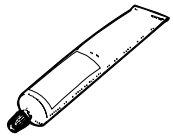
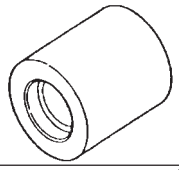
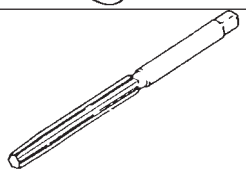
EAS00027

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
90890-01083(M6) YU-01083-1 90890-01085(M8) YU-01083-2 90890-01084 YU-01083-3	Rocker arm shaft puller bolt① Weight② These tools are used when removing or installing the rocker arm shafts.	
90890-01235 YU-01235	Rotor holding tool This tool is used to remove the flywheel magneto.	
90890-01268 YU-01268	Ringnut wrench This tool is used to loosen and tighten the exhaust and steering ring nut.	
90890-01311 YM-08035-A	Valve adjusting tool This tool is necessary for adjusting valve clearance.	
90890-01312 YM-01312-A	Fuel level gauge This gauge is used to measure the fuel level in the float chamber.	
90890-01326 YM-01326 90890-01294 YM-01300-1	T-handle① Damper rod holder② These tool are used for holding the Damper rod holder when removing or installing the damper rod holder.	
90890-01337 YM-33285 YM-33285-6	Clutch spring holder These tool are used for removing the nut with holding the compression spring.	
90890-01348 YM-01348	Lock nut wrench This tool is used when removing or installing the secondary sheave nut.	
90890-01189 YM-01189	Flywheel puller This tool is used for removing the A.C. magneto rotor.	

Tool NO.	Tool name / Function	Illustration
90890-01367 YM-A9409-7 90890-01400 YM-A9409-3	Fork seal driver weight ① Fork seal driver attachment(Ø30mm) ② This tool is used when installing the fork seal.	
90890-01384 YM-33299	Oil seal guide This tool is used for protecting the oil seal lip when installing the secondary sliding sheave.	
90890-01403 YU-33975	Ring nut wrench This tool is used to loosen and tighten the steering ring nut.	
90890-01701 YS-01880-A	Sheave holder This tool is used for holding the secondary sheave.	
90890-03079 YM-34483	Thickness gauge This tool is used to measure the valve cleanance.	
90890-03081 YU-33223	Compression gauge These tool are used to measure the engine compression.	
90890-03132 YU-03112-C	Pocket tester This instrument is invaluable for checking the electrical system.	
90890-03113 YU-08036-C	Engine tachometer This tool is needed for detecting engine rpm.	
90890-03141 YU-03141	Timing light This tool is needed for detecting ignition timing.	
90890-04019 YM-04019 90890-04108 YM-04108	Valve spring compressor Attachment(Ø19mm) These tools are used when removing or installing the valve and the valve spring.	

Tool NO.	Tool name / Function	Illustration
90890-06754 YM-34487	Ignition checker This instrument is necessary for checking the ignition system components.	
90890-85505 ACC-11001-05-01	Yamaha bond NO.1215 This sealant (bond) is used for crankcase mating surface, etc.	
80890-04116 YM-04116	Valve guide remover (4.5 mm) This tool is used to remove or install the valve guides.	
90890-04117 YM-04117	Valve guide installer (4.5 mm) This tool is used to install the valve guides.	
90890-04099 YM-04099	Valve guide reamer (5.0 mm) This tool is used to rebore the new valve guides.	

CHAPTER 2
SPECIFICATIONS

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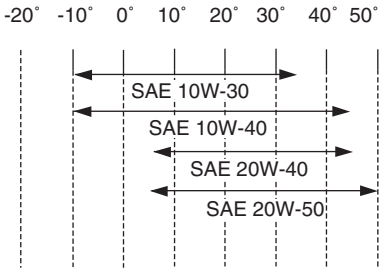
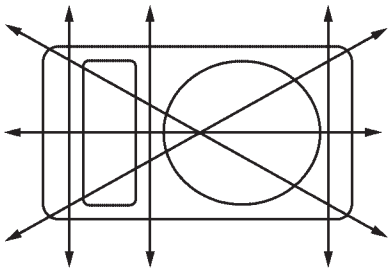
SPECIFICATIONS

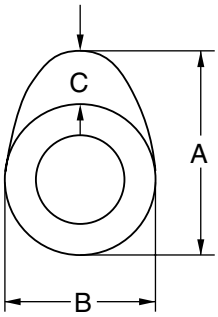
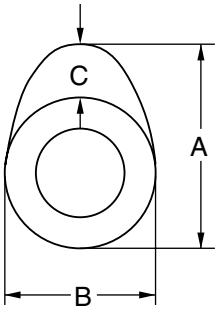
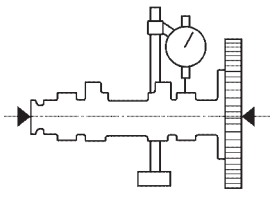
GENERAL SPECIFICATIONS

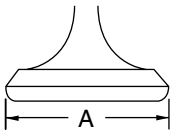
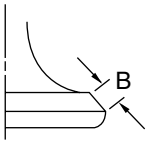
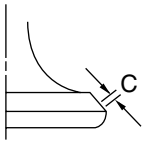
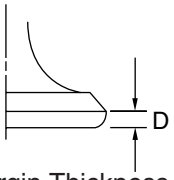
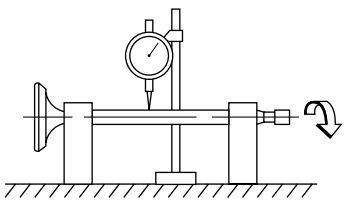
Item	Standard	Limit
Model code	5YR1 (for USA) 5YR2 (for CAN)	… …
Dimensions		
Overall length	1755 mm (69.1 in)	…
Overall width	699 mm (27.5 in)	…
Overall height	1063 mm (41.8 in)	…
Seat height	759 mm (29.8 in)	…
Wheelbase	1230 mm (48.4 in)	…
Ground clearance	95 mm (3.8 in)	…
Minimum turning radius	1800mm (72 in)	…
Weight		
Wet (without oil and a full fuel tank)	109 kg (240 lb)	…
Dry (without oil and fuel)	104kg (229 lb)	…
Maximun load (total of cargo, rider, passenger, and accessories)	253kg (558 lb)	…

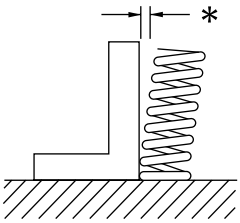
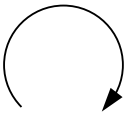
ENGINE SPECIFICATIONS

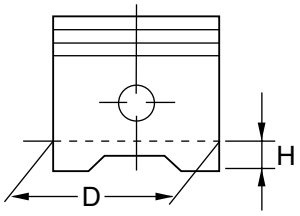
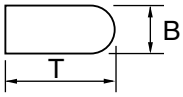
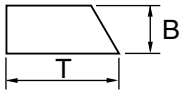
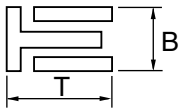
Item	Standard	Limit
Engine		
Engine type	Forced Air cooled 4-stroke, SOHC	…
Displacement	0.125L(125.0 cm^3)	…
Cylinder arrangement	Forward inclined single cylinder	…
Bore × stroke	51.5 × 60.0 mm	…
Compression ratio	9.8±0.4 :1	…
Engine idle speed	1600~1700 r/min	…
Vacuum pressure at engine idle speed	30.0 kpa(238.6 mmHg)	…
Standard compression pressure (at sea level)	950 kPa(9.5kg/cm^2) / 300 r/min	…
Fuel		
Recommended fuel	Regular unleaded gasoline	…
Fuel tank capacity		
Total (including reserve)	4.5L (0.98lmp gal, 1.18 USgal)	…
Engine oil		
Lubrication system	Wet sump	…
Recommended oil		
	SAE20W40SE Yamaha 4-cycle oil EFERO X, Z, BX	… …
Quantity		
Periodic oil change	1.0L(0.92 lmp qt, 1.09 US qt)	…
With oil filter replacement	1.2L(1.10 lmp qt, 1.31 US qt)	…
Total amount	1.2L(1.10 lmp qt, 1.31 US qt)	…
Final gear oil		
Recommended oil	SAE85W140S Ehypoid gear oil	…
Periodic oil change	0.13L(0.12 lmp qt, 0.14 US qt)	…
Total amount	0.15L(0.14 lmp qt, 0.16 US qt)	…

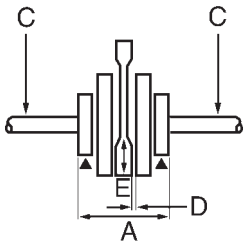
Item	Standard	Limit
Oil filter		
Oil filter type	Wire mesh	…
Oil pump		
Oil pump type	Trochoid	…
Inner rotor to outer rotor tip clearance	0.15 mm	0.23mm
Outer rotor to pump housing clearance	0.013-0.036 mm	0.106mm
Oil pump housing to inner rotor and outer rotor clearance	0.06-0.10 mm	0.17mm
Starting system type	Electric and kick starter	…
Spark plug		
Model (manufacturer) × quantity	CR7E (NGK) × 1	…
Spark plug gap	0.7~0.8mm	…
Cylinder head		
Volume	12.3~12.7cm³	…
Max. warpage	…	0.03 mm
 I1110304		

Item	Standard	Limit
Camshaft		
Drive system	Chain drive (left)	…
Intake camshaft lobe dimensions		
		
Measurement A	26.153~26.253 mm	26.053 mm
Measurement B	21.015~21.115 mm	20.915 mm
Measurement C	5.203mm	…
Exhaust camshaft lobe dimensions		
		
Measurement A	26.153~26.253 mm	26.053 mm
Measurement B	21.056~21.156 mm	20.956 mm
Measurement C	5.203 mm	…
Max. camshaft runout	…	0.03 mm
		

Item	Standard	Limit
Timing chain		
Model/number of links	Morse 92RH2005 / 88	…
Tensioning system	Automatic	…
Valve, valve seats, valve guides		
Valve clearance (cold)		
Intake	0.08~0.12 mm	…
Exhaust	0.13~0.17 mm	…
Valve dimensions		
 Head Diameter	 Face Width	 Seat Width
 Margin Thickness		
Valve head diameter A		
Intake	23.9~24.1 mm	…
Exhaust	20.9~21.1 mm	…
Valve face width B		
Intake	1.69~2.40 mm	…
Exhaust	1.69~2.40 mm	…
Valve seat width C		
Intake	0.9~1.1 mm	1.6mm
Exhaust	0.9~1.1 mm	1.6mm
Valve margin thickness D		
Intake	0.85~1.15 mm	…
Exhaust	0.85~1.15 mm	…
Valve stem diameter		
Intake	4.475~4.490 mm	4.445 mm
Exhaust	4.460~4.475 mm	4.430 mm
Valve guide inside diameter		
Intake	4.500~4.512 mm	4.550 mm
Exhaust	4.500~4.512 mm	4.550 mm
Valve stem to valve guide clearance		
Intake	0.010~0.037 mm	0.080 mm
Exhaust	0.025~0.057 mm	0.100 mm
Valve stem runout	…	0.010 mm
		
Valve seat width		
Intake	0.9~1.1 mm	1.6mm
Exhaust	0.9~1.1 mm	1.6mm

Item	Standard	Limit
Valve springs		
Free length		
Intake	37.30 mm	35.40 mm
Exhaust	37.30 mm	35.40 mm
Installed length (valve closed)		
Intake	25.77mm	…
Exhaust	25.77mm	…
Compressed spring force (installed)		
Intake	147±11N (15.0 ± 1.1 kgf/mm)	…
Exhaust	147±11N (15.0 ± 1.1 kgf/mm)	…
Spring tilt		
		
Intake	…	2.5°/1.6 mm
Exhaust	…	2.5°/1.6 mm
Winding direction (top view)		
Intake	Clockwise	…
Exhaust	Clockwise	…
		
Valve seat reformed	Yes	…
Cylinder		
Cylinder arrangement	Forward inclined single cylinder	…
Bore × stroke	51.5 × 60mm	…
Compression ratio	9.8 ± 0.4:1	…
Bore	51.49~51.53 mm	…
Max. taper	…	0.05 mm
Max. out-of-round	…	0.05 mm

Item	Standard	Limit
Piston		
Piston-to-cylinder clearance	0.010~0.030 mm	0.150mm
Diameter D	51.470~51.510 mm	…
		
Height H	3.5 mm	…
Piston pin bore (in the piston)		
Diameter	13.002~13.013 mm	13.043 mm
Offset	0.35~0.65mm	…
Offset direction	Intake side	…
Piston pin		
Outside diameter	12.996~13.000 mm	12.976 mm
Piston rings		
Top ring		
		
Ring type	Barrel	…
Dimensions (B × T)	1.0 × 2.1mm	…
End gap (installed)	0.10~0.20 mm	0.45mm
Ring side clearance	0.02~0.08 mm	0.13 mm
2nd ring		
		
Ring type	Plain	…
Dimensions (B × T)	1.0 × 2.1mm	…
End gap (installed)	0.20~0.30 mm	0.65mm
Ring side clearance	0.02~0.06 mm	0.12mm
Oil ring		
		
Dimensions (B × T)	2.0 × 2.2 mm	…
End gap (installed)	0.2~0.7 mm	…
Ring side clearance	0.06~0.15 mm	…

Item	Standard	Limit
Rocker arm/rocker arm shaft		
Rocker arm inside diameter	10~10.015mm	…
Rocker arm shaft outside diameter	9.981~9.991 mm	…
Arm-to-shaft clearance	0.009~0.034 mm	…
Connecting rod		
Connecting rod length	97.95~98.05 mm	…
Small end inside diameter	13.015~13.028mm	…
Crankshaft 		
Width A	45.15~45.20 mm	…
Max. runout C	…	0.03mm
Big end side clearance D	0.10~0.40 mm	1.00mm
Big end radial clearance E	0~0.010mm	…

Item	Standard	Limit
Clutch		
Clutch type	Automatic centrifugal	…
Clutch shoe thickness	3.4 ± 0.1 mm	2.0mm
Clutch shoe spring free length	28.0 ± 0.4 mm	…
Clutch housing inside diameter	120 ± 0.1 mm	120.3mm
Compression spring free length	113.6 mm	…
Weight outside diameter	20 ± 0.1 mm	…
Clutch-in revolution	3200±300 r/min	…
Clutch-stall revolution	5500±500 r/min	…
V-belt		
V-belt width	21.6 mm	19.5mm
Transmission		
Transmission type	V-belt automatic	…
Primary reduction system	Helical gear	…
Primary reduction ratio	40/15 (2.667)	…
Secondary reduction system	Spur gear	…
Secondary reduction ratio	38/13 (2.923)	…
Max. main axle runout	…	0.02 mm
Max. drive axle runout	…	0.02 mm
Carburetor		
Model (manufacturer) × quantity	BS26 (MIKUNI) × 1	…
ID mark	5YR 00	…
Venturi tube bore	Ø22.3	…
Main jet	#97.5	…
Main air jet	0.5	…
Jet needle	4D×16-1	…
Needle jet	0-4M	…
Pilot air jet 1	160	…
Pilot outlet	0.81	…
Pilot jet	22.5	…
Bypass 1	Ø0.8	…
Bypass 2	Ø1.0	…
Bypass 3	Ø1.1	…
Valve seat size	2.0	…
Starter jet 1	40	…
Starter jet 2	0.8	…
Throttle valve size	115	…
Fuel level (using fuel level gauge)	6.5~7.5mm	…
Engine idle speed	1600~1700 r/min	…
CO% (air induction system ON)	0.2~1.4 %	…
CO% (air induction system OFF)	4.0~5.0 %	…
Oil temperature (°C)	70~80 °C	…

Item	Standard	Limit
Throttle bodys		
Model (manufacturer) × quantity	5YR (SAFETY CONTROL CABLE) × 2	…
Intake vacuum pressure	30.0kpa (238.6mmHg)	…
Throttle cable free play (at the flange of the throttle grip)	3~5mm	…
ID mark	5YR1	…

CHASSIS SPECIFICATIONS

Item	Standard	Limit
Frame		
Frame type	Steel tube underbone	…
Caster angle	32 °	…
Trail	75 mm	…
Front wheel		
Wheel type	Cast wheel	…
Rim		
Size	10 × MT2.15	…
Material	Aluminum	…
Wheel travel	59mm	…
Wheel runout		
Max. radial wheel runout	…	1.0 mm
Max. lateral wheel runout	…	1.0 mm
Rear wheel		
Wheel type	Cast wheel	…
Rim		
Size	10 × MT2.15	…
Material	Aluminum	…
Wheel travel	54mm	…
Wheel runout		
Max. radial wheel runout	…	1.0 mm
Max. lateral wheel runout	…	1.0 mm
Front tire		
Tire type	Tubeless	…
Size	3.50-10 51J	…
Model (manufacturer)	C-922L (CHENG SHIN)	…
Tire pressure (cold)		
0~90 kg	150kpa (1.5 kg/cm², 22 psi)	…
90~197 kg	150kpa (1.5 kg/cm², 22 psi)	…
Min. tire tread depth	…	0.8mm
Rear tire		
Tire type	Tubeless	…
Size	3.50-10 51J	…
Model (manufacturer)	C-6007 (CHENG SHIN)	…
Tire pressure (cold)		
0~90 kg	200kpa (2.0 kg/cm², 29 psi)	…
90~197 kg	225kpa (2.25 kg/cm², 32 psi)	…
Min. tire tread depth	…	0.8mm

Item	Standard	Limit
Front disc brake		
Brake type	Single disc brake	…
Operation	Right-hand operation	…
Brake lever free play (at lever end)	3~5mm	…
Recommended fluid	DOT 4	…
Brake disc		
Diameter x thickness	180.0 × 4.0 mm	180.0 × 3.5 mm
Min. thickness	…	3.5mm
Max. deflection	…	0.10 mm
Brake pad lining thickness-inner	6.0 mm	0.8mm
Brake pad lining thickness-outer	6.0 mm	0.8mm
Master cylinder inside diameter	11mm	…
Caliper cylinder inside diameter	34.93mm	…

Item	Standard	Limit
Rear drum brake		
Brake type	Drum brake	…
Operation	Left-hand operation	…
Brake lever free play (at lever end)	10~20mm	…
Brake drum inside diameter	110 mm	111mm
Lining thickness	4.0mm	2mm
Front suspension		
Suspension type	Telescopic	…
Front fork type	Coil spring/oil damper	…
Front fork travel	80 mm	…
Spring		
Free length	257.5 mm	252.4mm
Installed length	245.5mm	…
Spring rate (K1)	12.7N/mm (1.27 kg/mm)	…
Spring stroke (K1)	0~50mm	…
Spring rate (K2)	19.6N/mm (1.96kg/mm)	…
Spring stroke (K2)	50~80mm	…
Optional spring available	No	…
Fork oil		
Recommended oil	Fork oil G10 or equivalent	…
Quantity (each front fork leg)	126 ± 2.5cc	…
Inner tube outer diameter	33 mm	…
Inner tube bending limit	…	0.2 mm
Steering system		
Steering bearing type	Angular bearing	…
Lock to lock angle (left)	47.5 °	…
Lock to lock angle (Right)	47.5 °	…
Rear suspension		
Suspension type	Swingarm	…
Rear shock absorber assembly type	Coil spring/oil damper	…
Rear shock absorber assembly travel	65mm	…
Spring		
Free length	208mm	…
Installed length	198mm	…
Spring rate (K1)	43N/mm (4.3kg/mm)	…
Spring stroke (K1)	0~65mm	…
Optional spring available	No	…

ELECTRICAL SPECIFICATIONS

Item	Standard	Limit
System voltage	12V	…
Ignition system		
Ignition system type	C.D.I.	…
Ignition timing (B.T.D.C.)	5 °/1650 r/min (IDL)	…
Advancer type	Digital	…
Pickup coil resistance /color	304~456 Ω / WR-WL	…
C.D.I. unit model (manufacturer)	5YR00(T-MORIC)	…
Ignition coil		
Model (manufacturer)	2JN (T-MORIC)	…
Minimum ignition spark gap	6mm	…
Primary coil resistance	0.184~0.276 Ω at 20 ° C	…
Secondary coil resistance	6.32~9.48 kΩ at 20 ° C	…
Spark plug cap		
Material	Resin	…
Resistance	8~12 kΩ	…
Charging system		
System type	C.D.I. magneto	…
Model (manufacturer)	5NW 01 (T-MORIC)	…
Nominal output	14V 120W / 5000 r/min	…
Lighting coil resistance /color	0.28~0.42 Ω/B-YR	…
Lighting coil resistance /color	0.32~0.48 Ω/B-W	…
Voltage regulator		
Regulator type	Semiconductor, short circult	…
Model (manufacturer)	SH671-12 (XIN DIAN YUAN)	…
No load regulated voltage(DC)	14~15 V	…
Rectifier		
Model (manufacturer)	SH671-12 (XIN DIAN YUAN)	…
Rectifier capacity(DC)	8A	…
Withstand voltage	200V	…
Battery		
Battery type (manufacturer)	GTX7A-BS (GS)	…
Battery voltage capacity	12V 6AH	…
Specific gravity	1.330	…
Ten hour rate amperage	6 AH	…
Headlight type	Krypton bulb	…
Indicator light		
(voltage/wattage×quantity)		
Turn signal indicator light	12 V 1.7 W × 1	…
High beam indicator light	14 V 3W × 1	…

Item	Standard	Limit
Bulbs (voltage/wattage × quantity)		
Headlight	12 V 60 W/55 W × 1	…
Tail/brake light	12 V 8W/27 W × 1	…
Front turn signal light	12 V 10 W × 2	…
Rear turn signal light	12 V 10 W × 2	…
Speedometer light	14 V 3 W ×1	…
Fuel lever meter light	14 V 3 W ×1	…

Item	Standard	Limit
Electric starting system		
System type	Constant mesh	…
Starter motor		
Model (manufacturer)	4TE1 (T-MORIC)	…
Suction voltage	12V	…
Power output	0.3 kW	…
Brushes		
Overall length	10.0 mm	3.5mm
Quantity	2	…
Spring force	5.52~8.28 N	…
Commutator diameter	22 mm	21mm
Commutator resistance	0.0306~0.0374 Ω at 20 °C	…
Mica undercut (depth)	1.5 mm	…
Starter relay		
Model (manufacturer)	3UH1 (SHI LIN)	…
Amperage	100 A	…
Coil resistance	3.6-4.4 Ω	…
Suction voltage	Below DC8V	…
Horn		
Horn type	Plane	…
Model (manufacturer)	AH-368 (ASIA TRAFFIC)	…
Max. amperage	1.5 A	…
Performance	95~105db/2m	…
Coil resistance	4.05~4.55 Ω	…
Turn signal relay		
Relay type	Semi transistor	…
Model (manufacturer)	5CA9 (TA YOUNG)	…
Self-cancelling device built-in	NO	…
Turn signal blinking frequency	75~95 cycles/min	…
Wattage	10 W × 2 + 1.7 W+ AP	…
Fuel sender		
Model (manufacturer)	5YR1 (CHAO LONG)	…
Sender unit resistance-full	4-10 Ω	…
Sender unit resistance-empty	90-100 Ω	…
Starting circuit cut-off relay		
Model (manufacturer)	09-N (SHI LIN)	…
Coil resistance	54~66 Ω	…
Thermostat switch		
Model (manufacturer)	1AJ (NATIONAL)	…
Carburetor heater		
Manufacturer	MIKUNI	…
Coil resistance	30 Ω 20°C	…

Item	Standard	Limit
Fuel lever meter		
Type(manufacturer)	Moving magneto (CHAO LONG)	…
Fuse (amperage × quantity)		
Main fuse	10A×1	…
Reserve fuse	10A×1	…

EB201000
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.

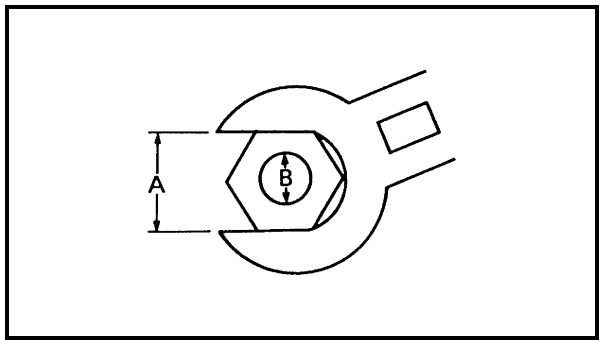
METRIC	MULTIPLIER	IMPERIAL
** mm	0.03937	** in
2 mm	0.03937	0.08 in

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

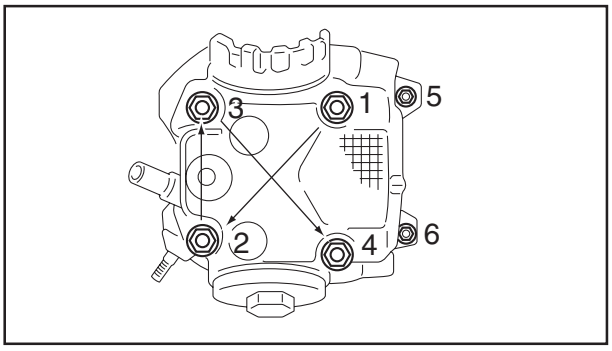
A (nut)	B (bolt)	General tightening torques		
		Nm	m•kg	ft•lb
10 mm	6 mm	6	0.6	4.3
12 mm	8 mm	15	1.5	11
14 mm	10 mm	30	3.0	22
17 mm	12 mm	55	5.5	40
19 mm	14 mm	85	8.5	61
22 mm	16 mm	130	13.0	94

ENGINE TIGHTENING TORQUES

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m•kgf	ft•lb	
Cylinder head and cylinder	Nut	M8	4	22	2.2	15.9	④
Spark plug	_	M10	1	12.5	1.25	9	
Cylinder head(timing chain side)	Bolt	M6	2	12	1.2	8.7	
Mainfold stud bolt	_	M6	2	7	0.7	5.1	
Exhaust pipe stud bolt	_	M6	2	7	0.7	5.1	
Breather assembly	Bolt	M6	2	7	0.7	5.1	
Stopper plate	Bolt	M6	1	7	0.7	5.1	
Guide stopper2	Bolt	M6	1	7	0.7	5.1	
Valve clearance adjusting screw lock nut	_	M5	2	7	0.7	5.1	
Camshaft sprocket	Bolt	M8	1	30	3.0	21.7	
Timing chain tensioner (body)	Bolt	M6	2	10	1.0	7.2	
Timing chain tensioner (plug)	plug	M8	1	8	0.8	5.8	
Air shroud 1and 2	Screw		5	1.5	0.15	1.1	
Air shroud 1	Screw	M6	2	7	0.7	5.1	
Air shroud 1	Bolt	M6	1	8	0.8	5.8	And AI pipe tighten
Fan	Screw	M6	3	7	0.7	5.1	
Oil pump assembly	Screw	M6	2	7	0.7	5.1	
Cover element	Bolt	M6	2	8	0.8	5.8	
Cover element inside drain bolt	_	M6	1	7	0.7	5.1	
Delivery pipe	Union bolt	M8	1	10	1.0	7.2	
Delivery pipe	Bolt	M6	1	8	0.8	5.8	
Engine oil drain	plug	M35	1	32	3.2	23.1	
Mainfold	Nut	M6	2	7	0.7	5.1	
Air filter assembly	Screw	M6	2	7	0.7	5.1	
Air filter case and air filter cap	Screw	M6	5	7	0.7	5.1	
Element cap	Screw	M6	1	7	0.7	5.1	
Carburetor overflow drain plug	plug	M6	1	2	0.2	1.4	
Muffler	Nut	M6	2	10	1.0	7.2	
Muffler	Bolt	M8	2	31	3.1	22.4	
Protector	Screw	M6	2	7	0.7	5.1	
Air induction system assembly	Screw	M5	4	4	0.4	2.9	
AI bracket and muffler	Screw	M5	4	4	0.4	2.9	
AI pipe	Bolt	M6	1	8	0.8	5.8	And air shroud tighten
AI pipe clamp	Hose clamp		1	4.5	0.45	3.3	
AI filter	Bolt	M6	2	1.5	0.15	1.1	
Crankcase 1and 2	Bolt	M6	8	12	1.2	8.7	
Crankcase cover1	Bolt	M6	10	10	1.0	7.2	
Crankcase cover2	Bolt	M6	5	12	1.2	8.7	
Cover1(magneto)	Screw	M6	3	7	0.7	5.1	
Drain bolt(transmission oil)	Bolt	M8	1	23	2.3	16.6	

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m•kgf	ft•lb	
Drain bolt(engine oil)	_	M8	1	23	2.3	16.6	
V-belt case air filter element holder	Screw	M6	1	7	0.7	5.1	
Oil pipe	Bolt	M6	1	10	1.0	7.2	
Cylinder stud bolt (case1)	_	M8	2	12.5	1.25	9	
Cylinder stud bolt (case2)	_	M8	2	12.5	1.25	9	
Crankcase cover3	Screw	M6	3	7	0.7	5.1	
Plate (V-belt guide)	Screw	M6	3	9	0.9	6.5	
Idle gear plate	Screw	M6	2	7	0.7	5.1	
Kick crank assembly	Bolt	M8	1	23	2.3	16.6	
Clutch housing	Nut	M14	1	60	6.0	43.4	
Clutch carrier assembly	Nut	M36	1	90	9.0	65.1	
Primary fixed sheave	Nut	M12	1	55	5.5	39.8	
Starter motor assembly	Bolt	M6	2	7	0.7	5.1	
C.D.I. rotor	Nut	M12	1	70	7.0	50.6	

Cylinder head tightening sequence

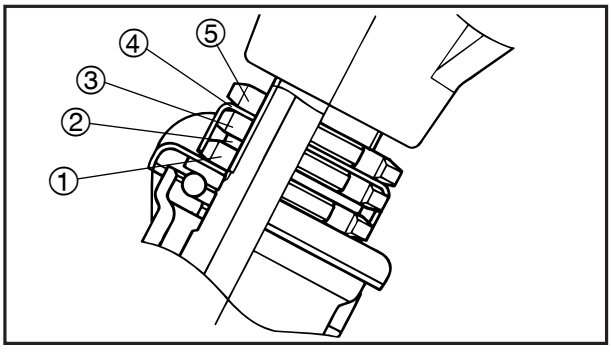


CHASSIS TIGHTENING TORQUES

Part to be tightened	Thread size	Tightening torque			Remarks
		Nm	m•kgf	ft•lb	
Frame and engine bracket 2	M10	42	4.2	30.4	
Engine bracket 2 and engine bracket 3	M10	55	5.5	39.8	
Engine bracket, engine and centerstand	M10	32	3.2	23.1	
Rear shock absorber and frame	M10	30	3.0	21.7	
Rear shock absorber and engine	M8	18	1.8	13.0	
Rear arm	M8	28	2.8	20.3	
Sidestand (bolt)	M8	1	0.1	0.7	
Sidestand (nut)	M8	19	1.9	13.7	
Steering shaft(upper nut)	M25	75	7.5	54.2	See"NOTE"
Handlebar holder bracket and steering shaft	M10	60	6.0	43.4	
Handlebar holder and handlebar lower holder	M10	47.5	4.75	34.4	
Handlebar lower holder and handlebar upper holder	M8	30	3.0	21.7	
Master cylinder assembly	M6	9	0.9	6.5	
Brake hose and master cylinder	M10	26	2.6	18.8	
Fuel sender	M5	7	0.7	5.1	
Rear carrier	M8	23	2.3	16.6	
Rear carrier(upper)	M6	10	1.0	7.2	
Front wheel shaft	M12	70	7.0	50.6	
Rear wheel shaft	M14	105	10.5	75.9	
Rear brake camshaft lever	M6	10	1.0	7.2	
Front brake caliper pad(bolt)	M10	22	2.2	15.9	
Front brake caliper and front fork	M10	35	3.5	25.3	
Front brake disc rotor	M8	20	2.0	14.5	LT
Front brake hose and brake caliper	M10	23	2.3	16.6	
Front brake caliper and bleed screw	M7	6	0.6	4.3	

NOTE:

1. First, tighten the ring nut (lower) approximately 28 Nm (2.8m•kg, 20.3ft•lb) by using the torque wrench, then loosen the ring nut 1/4 turn.
2. Second, tighten the ring nut (lower) approximately 9 Nm (0.9m•kg, 6.5ft•lb) by using the torque wrench.
3. Installing the rubber washer.
4. Then finger tighten the center ring nut and touch rubber washer. Align the slots both ring nut and install the lock washer.
5. Final, hold the ring nuts (lower and center) and tighten the ring nut (upper) 75Nm (7.5 m•kg, 54.2ft•lb) by using the torque wrench.



① Lower ring nut
② Rubber washer
③ Center ring nut
④ Lock washer
⑤ Upper ring nut

ENGINE LUBRICATION POINTS AND LUBRICANT TYPES

Lubrication Point	Lubricant
Oil seal lips	LS
O-ring (Except V-belt drive unit)	LS
Cylinder head tightening nut mounting surface	4
Cylinder head stud bolt thread	4
Cylinder head gasket dowel pin	4
Crankshaft pin outside surface	4
Connecting rod	4
Piston outside and ring groove	4
Piston pin outside surface	4
surface and bolt thread	4
Crankshaft journal	4
Piston (balancer) outside surface	4
Piston pin (balancer) outside surface	4
Camshaft profile journal	M
Valve stem (IN, EX)	M
Valve stem seal	M
Valve stem end (IN, EX)	M
Valve lifter	4
Oil pump assembly inside	4
Oil pipe union bolt thread and surface	4
Gasket (Oil pump assembly)	LS
Idle gear 1 thrust surfaces	4
Idle gear 2	4
Drive shaft serration (Sprocket)	LS
Drive shaft taper rollor bearing	LS
Transmission bearing	G
Secondary shaft bearing (right)	LS
Primary sheave oil seal	LS

LUBRICATION POINTS AND LUBRICANT TYPES

SPEC

Lubrication Point	Lubricant
Primary sheave inside, Collar, Solid bush,	
Secondary fixed inner surface	BEL-RAY asembly lube
Secondary sheave torque cam ditch	BEL-RAY asembly lube
Gasket (Cylinder head cover)	Sealant
Stopper guide (Cylinder head cover)	Sealant
Crankcase mating surfaces	Sealant
Oil pipe	Sealant
C.D.I. magneto lead grommet	Sealant

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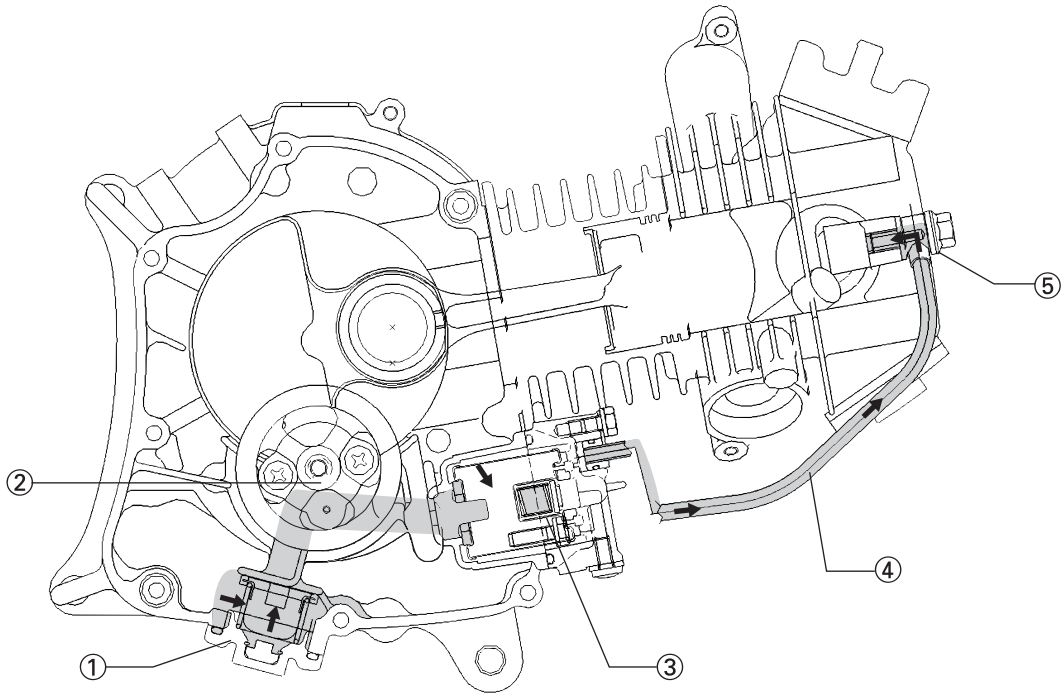
CHASSIS LUBRICATION POINTS AND LUBRICATION TYPES

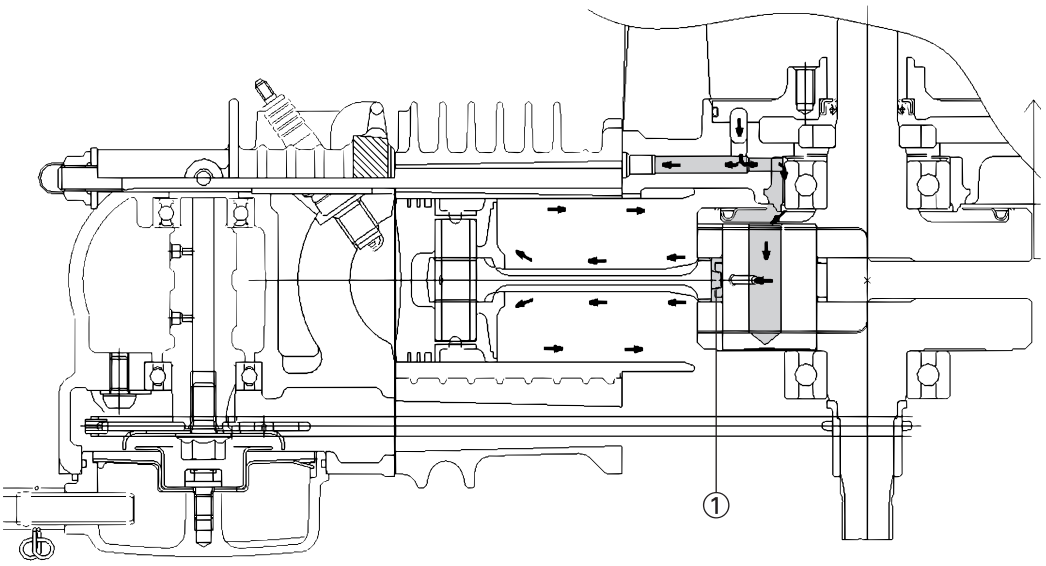
Lubrication Point	Lubricant
Front wheel oil seal lips	LS
Frame head pipe bearing (upper and lower)	LS
Frame head pipe dust seal lips (lower)	LS
Tube guide (throttle grip) inner surface	LS
Brake lever and lever holder bolt sliding surface	LS
Sidestand and frame sliding surface	LS
Centerstand sliding surface and mounting bolt	LS
Rear footrest (pin) outside surface	LS
Rear shock absorber backward, bush inner surface and spacer sliding surface	M
Seat lock cable and cylinder inner surface	LS
Engine bracket and engine mound bolt sliding surface	LS

OIL FLOW DIAGRAMS

① Oil strainer
② Oil pump
③ Oil filter
④ Oil delivery pipe
⑤ Oil delivery pipe union bolt

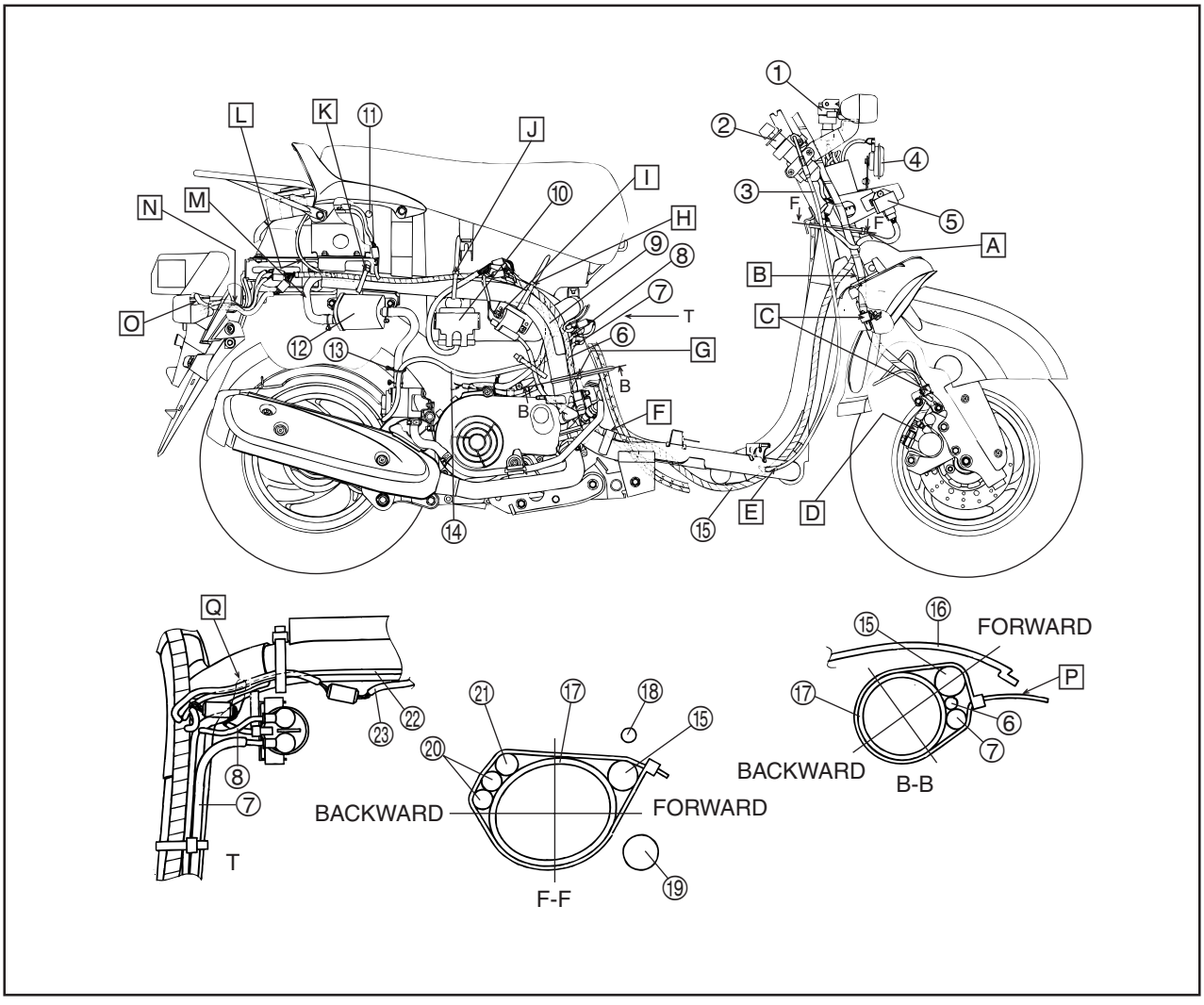


① Connecting rod big end bearing

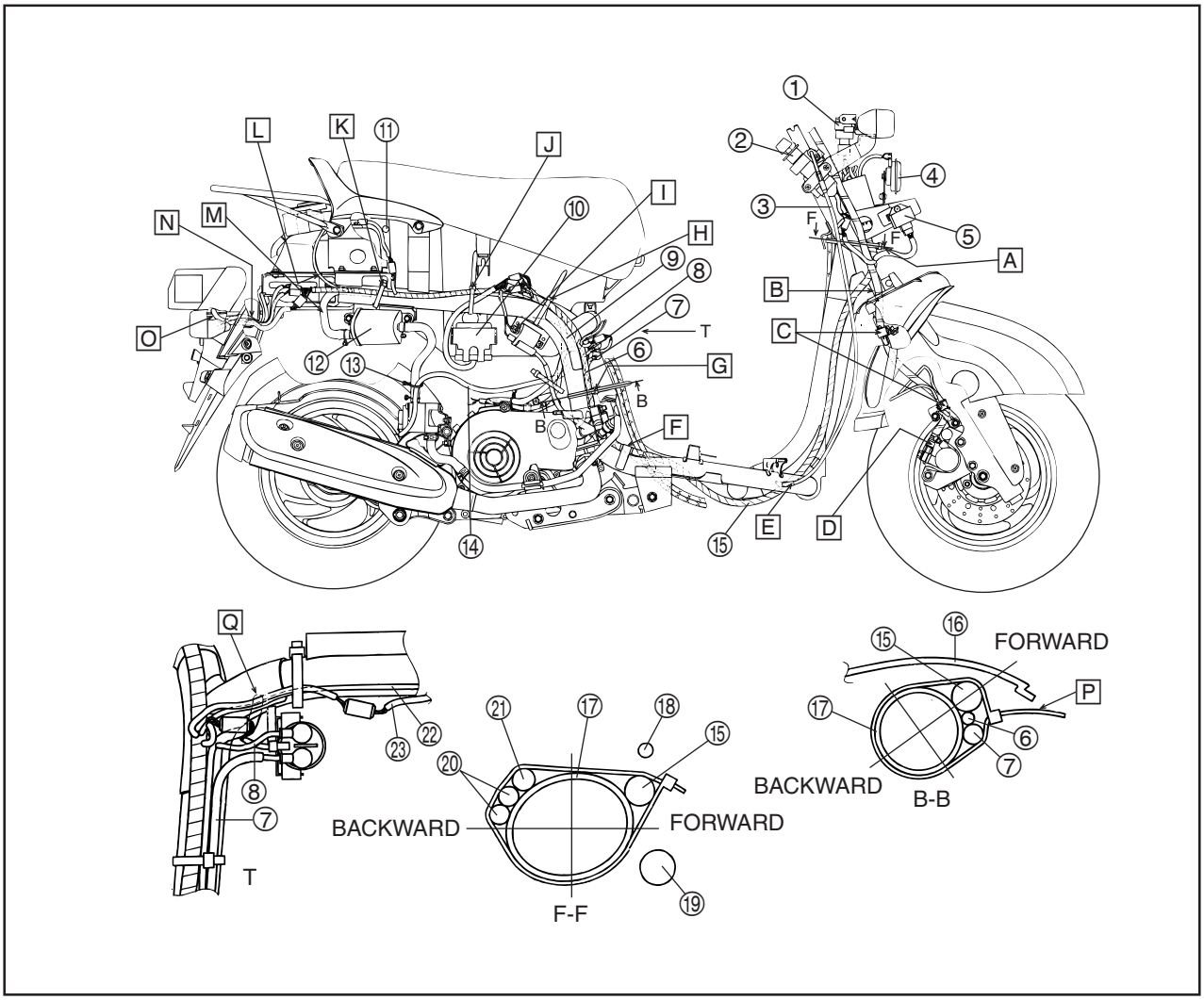


CABLE ROUTING

① Turn signal relay
② Main switch assembly
③ Seat lock cable
④ Horn
⑤ Rectifier / regulator assembly
⑥ Starter motor negative lead
⑦ Wire (negative lead)
⑧ Starter motor positive lead
⑨ C.D.I. magneto lead
⑩ C.D.I. unit
⑪ Pipe 2
⑫ AI. filter assembly
⑬ Clamp
⑭ Vacuum sensing hose
⑮ Wire harness
⑯ Side cover (right)
⑰ Frame Comp.
⑱ Speedometer cable
⑲ Front brake hose
⑳ Throttle cable 1,2
㉑ Rear brake cable
㉒ Speedometer lead
㉓ Auto choke lead
[A] Fasten the wire harness, rear brake cable and throttle cable 1,2 to the frame and cut the end to be shorter than 5mm.
[B] Route the front brake hose through the under fender and inner fender right side hole.
[C] Route the front brake hose through the front brake hose holder.
[D] Colar white mark to the outside.
[E] The seat lock cable pass the frame right side hole into frame inside, protector part to the hole position.
[F] Clamp the wire harness, wire positive lead and wire negative lead to the frame, clamp position to the white mark and press to tighten.
[G] Fasten the wire harness, wire positive lead and starter motor negative lead to the frame with a plastic locking tie, point the band tip to forward.
[H] Fasten the C.D.I. magneto lead and wire harness to the frame with a plastic locking tie, point the band tip to upper and the trunk surface.
[I] Secure the ground lead and the ignition coil base to the ignition coil stay.

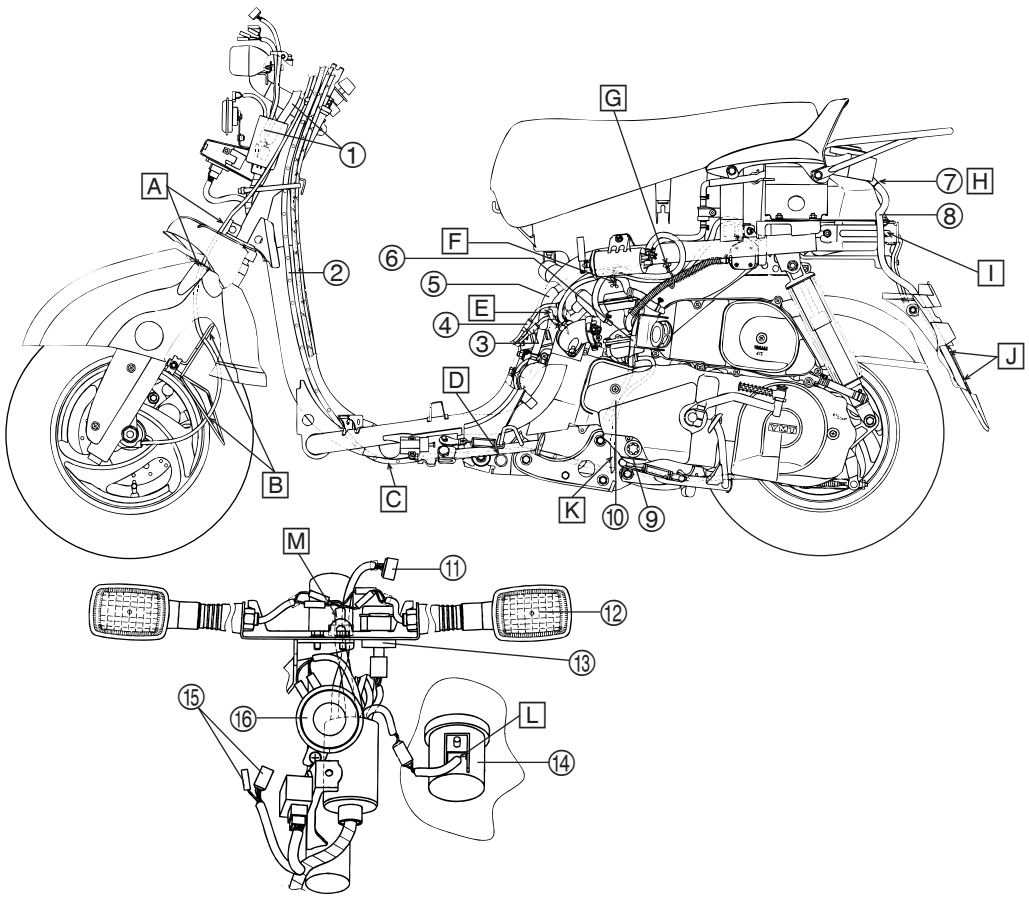


J Fasten the C.D.I. unit lead and wire harness to the frame with a plastic locking tie, point the band tip to upper and the trunk surface.
K Fasten the wire harness to the frame and cut the end to be shorter than 5mm.
L Pass the seat lock cable along the outside of the reinf tail.
M Installing the bend hose 5 to the AI. Filter assembly, into the frame inside.
N Route the trail light lead and rear turn signal light lead through the rear cover hole.
O The tail light through the base hole.



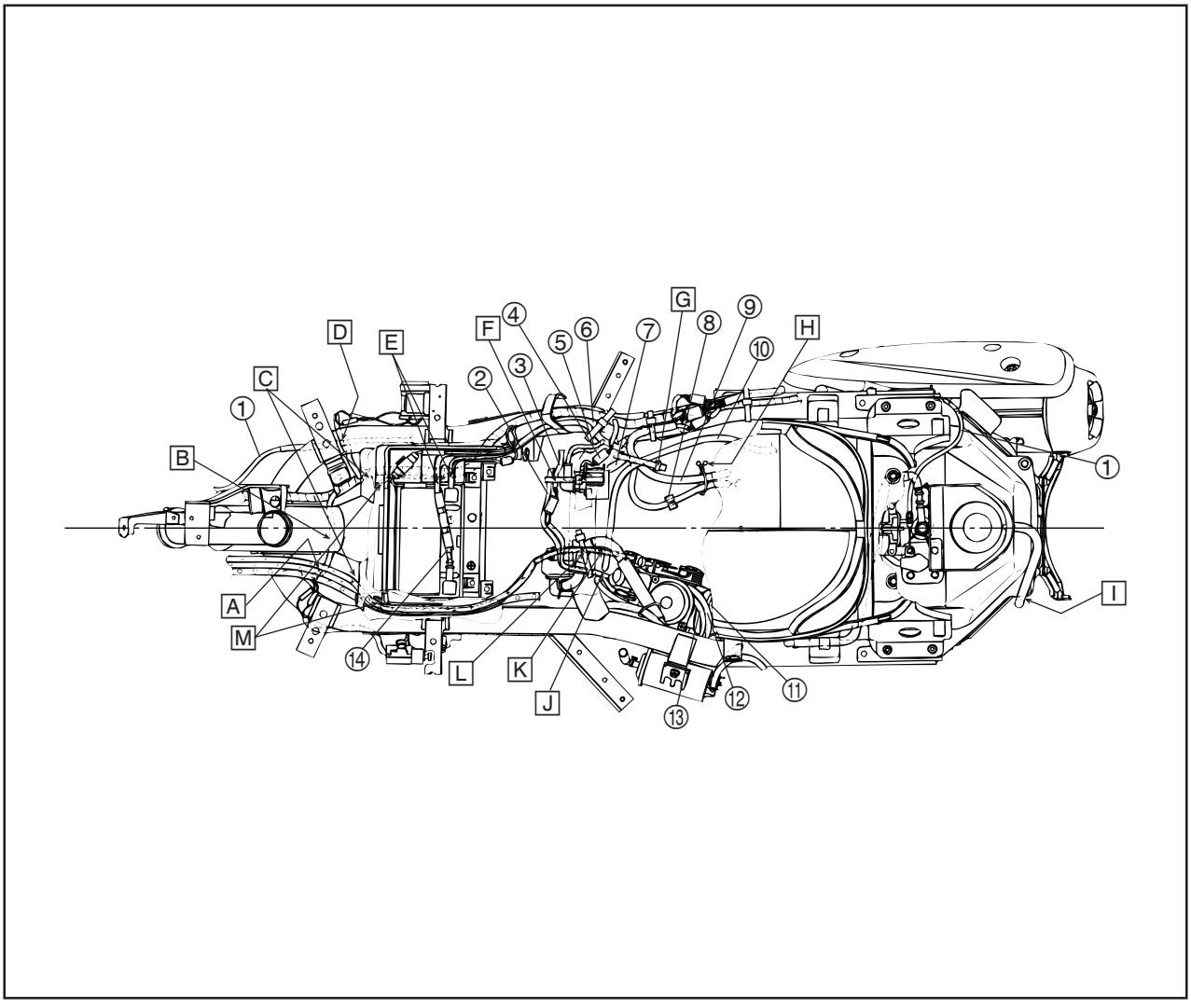
① Lever holder assembly (left side)
② Rear brake cable
③ Throttle cable 1 (left turn side)
④ Throttle cable2 (right turn side)
⑤ Breather hose
⑥ Carburetor air vent hose
⑦ Spacer
⑧ Fuel overflow pipe
⑨ Crankcase cover 3
⑩ Starter air vent hose
⑪ Head light unit
⑫ Front turn signal light
⑬ Turn signal relay
⑭ Fuel lever meter
⑮ Main switch assembly
⑯ Horn

[A] Pass the speedometer cable left side the inner fender and front fender hole.
[B] Pass the speedometer cable through the speedometer cable holder.
[C] Pass the rear brake cable through the rear brake cable holder.
[D] Pass the rear brake cable over the engine bracket cross tube bar.
[E] Route the vacuum sensing hose between throttle cable 1 and throttle cable 2.
[F] Clamp the canister pipe, breather hose and fuel cock vacuum hose, the end of down.
[G] Clamp the canister pipe, fuel hose and fuel cock vacuum hose.
[H] The filler cover and fuel overflow hose into the spacer.
[I] Pass the fuel overflow hose outside the rear bracket.
[J] Pass the fuel overflow hose through license bracket holder.
[K] Pass the carburetor overflow hose through shroud and crankcase cover 3 breach.
[L] The fuel lever meter lead terminal through the leg shield 2.
[M] Clamp the wire harness and head light lead to the turn signal bracket.



① Seat lock cable
② Carburetor heater lead
③ Carburetor autochoke lead
④ Starter switch lead
⑤ Starter motor positive lead
⑥ Starter motor negative lead
⑦ High tension cord
⑧ Clamp
⑨ C.D.I. magneto lead
⑩ Vacuum sensing hose
⑪ Joint
⑫ Carburetor air vent hose
⑬ Starter air vent hose
⑭ Wire (positive lead)

[A] Pass the sidestand switch lead under the rear brake cable and throttle cable 1,2.
[B] Pass the sidestand switch lead under the frame.
[C] Pass the throttle cable, wire harness and rear brake cable under the frame cross tube.
[D] Pass the thermo switch lead under the frame.
[E] Pass the positive and negative battery leads through the slot in the footrest board.
[F] Fasten the autochoke lead and heater lead to the cross tube and cut the end to be shorter than 5mm.
[G] Fasten the vacuum sensing hose, starter motor positive lead, C.D.I. magneto lead and high tension cord, and the vacuum sensing hose to the over position and cut the end.
[H] Clamp the starter motor lead and C.D.I. magneto lead.
[I] Pass the fuel overflow hose along the left side of the fuel tank.
[J] Route the autochoke lead and heater lead between vacuum sensing hose and fuel cock vacuum hose.
[K] Pass the breather hose right side the throttle cable.
[L] Fasten the breather hose, autochoke lead, heater lead and throttle cable 1, 2. Breather hose to the over position and cut the end.
[M] Pass the throttle cable, wire harness and rear brake cable outside the inner fender rib.



CHAPTER 3
PERIODIC CHECKS AND ADJUSTMENTS

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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.

NOTE:

The annual checks must be performed every year, except if a kilometer-based maintenance is performed instead.

From 30,000 km, repeat the maintenance intervals starting from 6,000 km.

Items marked with an asterisk should be performed by a Yamaha dealer as they require special tools, data and technical skills.

EAU17560*

Periodic maintenance chart for the emission control system

NO.		ITEM	ROUTINE	ODOMETER READING				
				600 mi (1,000 km) or 1 month	2,000 mi (4,000 km) or 6 months	4,000 mi (7,000 km) or 12 months	6,000 mi (10,000 km) or 18 months	8,000 mi (13,000 km) or 24 months
1	*	**Fuel line**	• Check fuel hoses and vacuum hose for cracks or damage.		√	√	√	√
2	*	**Valves**	• Check valve clearance. • Adjust if necessary.		√	√	√	√
3	*	**Spark plug**	• Check condition. • Clean and regap.		√	√	√	√
			• Replace.			√		√
4	*	**Air filter element**	• Clean.		√		√	
			• Replace.			√		√
5	*	**Crankcase breather system**	• Check breather hose for cracks or damage. • Replace if necessary.		√	√	√	√
6	*	**Carburetor**	• Adjust engine idling speed.	√	√	√	√	√
7	*	**Exhaust system**	• Check for leakage. • Tighten if necessary. • Replace gaskets if necessary.		√	√	√	√
8	*	**Evaporative emission control system**	• Checkcontrol system for damage. • Replace if necessary.		√		√	
9	*	**Air induction system**	• Check the air cut-off valve, reed valve, and hose for damage. • Replace any damaged.		√	√	√	√

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

NOTE:

From 10000 mi (16000 km) or 30 months, repeat the maintenance intervals starting from 2000 mi (4000 km) or 6 months.

EAU32121

General maintenance and lubrication chart

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

NOTE:

From 12000 mi (18000 km) or 36 months, repeat the maintenance intervals starting from 4000 mi (7000 km) or 12 months.

NO.		ITEM	ROUTINE	ODOMETER READING				
				600 mi (1,000 km) or 1 month	2,000 mi (4,000 km) or 6 months	4,000 mi (7,000 km) or 12 months	6,000 mi (10,000 km) or 18 months	8,000 mi (13,000 km) or 24 months
1	*	V-belt case air filter elements	• Clean.		√		√	
			• Replace.			√		√
2	*	Front brake	• Check operation, fluid level and vehicle for fluid leakage. (See NOTE)	√	√	√	√	√
			• Replace brake pads.	Whenever worn to the limit				
3	*	Rear brake	• Check operation and adjust brake lever free play.	√	√	√	√	√
			• Replace brake shoes.	Whenever worn to the limit				
4	*	Brake hose	• Check for cracks or damage.		√	√	√	√
			• Replace. (See NOTE)	Every 4 years				
5	*	Wheels	• Check runout and for damage.		√	√	√	√
6	*	Tires	• Check tread depth and for damage. • Replace if necessary. • Check air pressure. • Correct if necessary.		√	√	√	√
7	*	Wheel bearings	• Check bearing for looseness or damage.		√	√	√	√
8	*	Steering bearings	• Check bearing play and steering for roughness.	√	√	√	√	√
			• Lubricate with lithium-soap-based grease.	Every 16,000 mi (24,000 km)				
9	*	Chassis fasteners	• Make sure that all nuts, bolts and screws are properly tightened.		√	√	√	√
10		Sidestand, centerstand	• Check operation. • Lubricate.		√	√	√	√
11	*	Sidestand switch	• Check operation.	√	√	√	√	√
12	*	Front fork	• Check operation and for oil leakage.		√	√	√	√
13	*	Shock absorber assembly	• Check operation and shock absorber for oil leakage.		√	√	√	√
14		Engine oil	• Change. • Check oil level and vehicle for oil leakage.	√	Every 1,900 mi (3,000 km)			
15	*	Engine oil filter element	• Clean.	√		√		√
16	*	Engine oil strainer	• Clean.	√		√		√
17		Final transmission oil	• Change.	√		√		√
18	*	V-belt	• Replace.	Every 12,000 mi (18,000 km)				
19	*	Front and rear brake switches	• Check operation.	√	√	√	√	√
20		Moving parts and cables	• Lubricate.		√	√	√	√
21	*	Throttle grip housing and cable	• Check operation and free play. • Adjust the throttle cable free play if necessary. • Lubricate the throttle grip housing and cable.		√	√	√	√
22	*	Lights, signals and switches	• Check operation. • Adjust headlight beam.	√	√	√	√	√

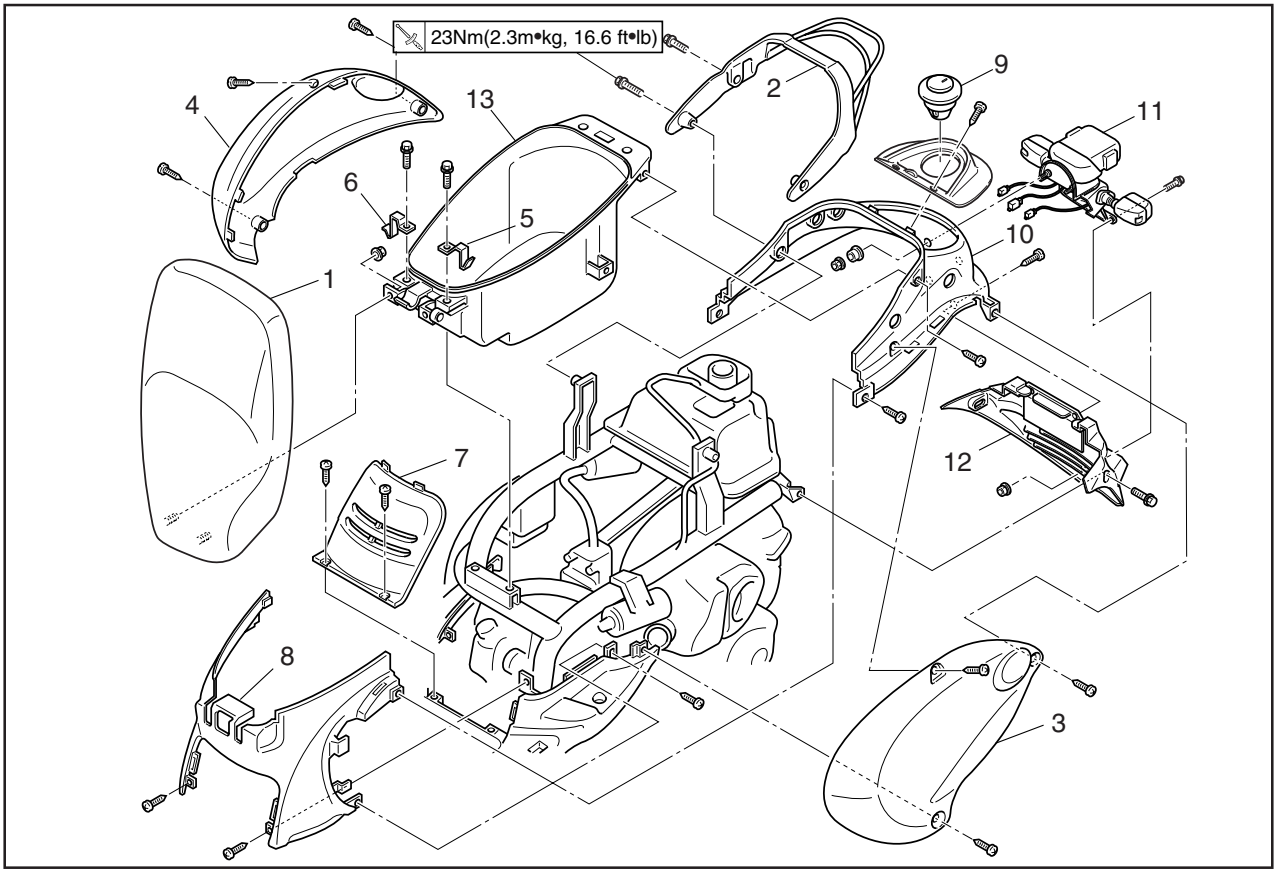
EAU17620

NOTE:

- The air filter needs more frequent service if you are riding in unusually wet or dusty areas.
- Hydraulic brake system
  - When disassembling the master cylinder or caliper cylinder, always replace the brake fluid. Check the brake fluid level regularly and fill as required.
  - Replace the oil seals on the inner parts of the master cylinder and caliper cylinder every two years.
  - Replace the brake hoses every four years or if cracked or damaged.

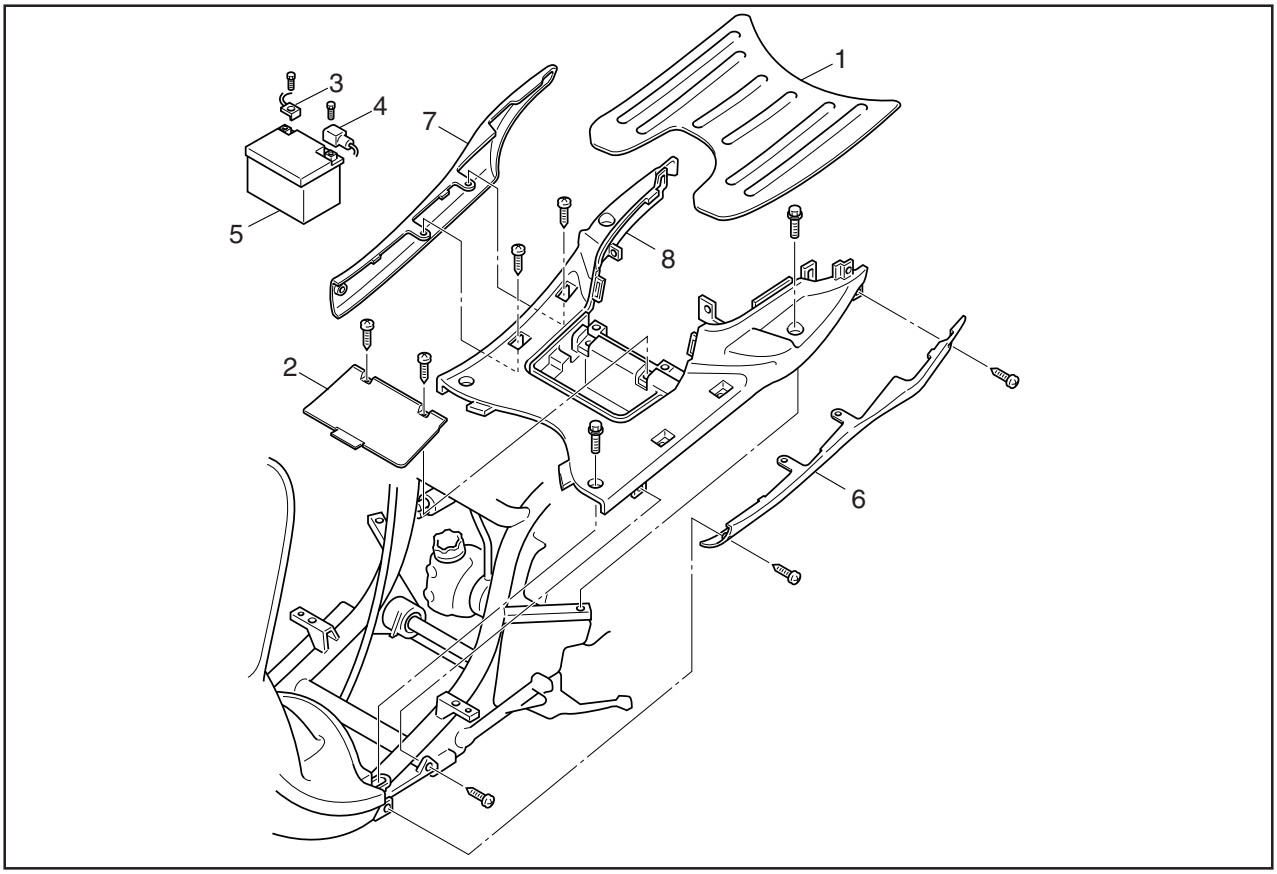
COVER AND PANEL

SEAT AND SIDE COVERS



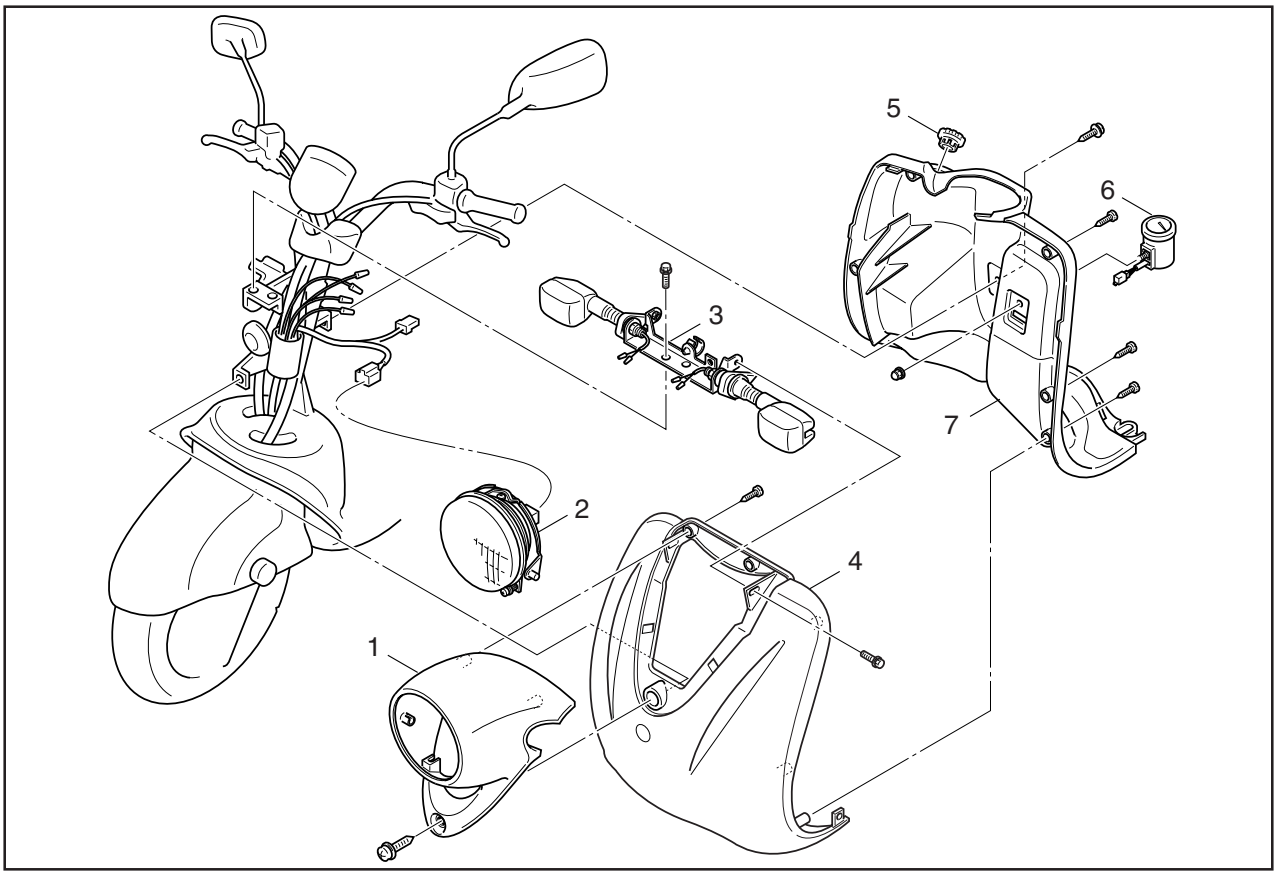
Order	Job/Part	Q'ty	Remarks
	Removing the seat and side covers		Remove the parts in the order listed.
1	Seat	1	
2	Rear carrier	1	
3	Side cover(left)	1	
4	Side cover(right)	1	
5	Hook(left)	1	
6	Hook(right)	1	
7	Cover	1	
8	Front cover	1	
9	Fuel tank cap	1	
10	Rear cover	1	
11	Tail / brake light	1	
12	License plate	1	
13	Trunk	1	
			For installation, reverse the removal procedure.

FOOTREST BOARD AND FOOTREST BOARD SIDE COVER MOLE



Order	Job/Part	Q'ty	Remarks
	Removing the footrest board and footrest board side cover mole		Remove the parts in the order listed.
	Side covers(left and right)		Refer to "SEAT AND SIDE COVERS"
1	Mat	1	
2	Battery cover	1	
3	Battery negative(-) lead	1	**CAUTION:**
4	Battery positive(+) lead	1	**First, disconnect the negative battery lead, and then the positive battery lead.**
5	Battery	1	
6	Footrest board side cover mole(left)	1	
7	Footrest board side cover mole(right)	1	
8	Footrest board	1	For installation, reverse the removal procedure.

LEG SHIELD 1 , 2



Order	Job/Part	Q'ty	Remarks
	Removing the leg shield 1,2 Footrest board		Remove the parts in the order listed. Refer to "FOOTREST BOARD AND FOOTREST BOARD SIDE COVER MOLE"
1	Headlight cover	1	
2	Headlight assembly	1	
3	Front turn signal light bracket	1	
4	Leg shield 1	1	
5	Main switch cover	1	
6	Fuel lever meter	1	
7	Leg shield 2	1	
			For installation, reverse the removal procedure.

EAS00049

ENGINE

ADJUSTING THE VALVE CLEARANCE

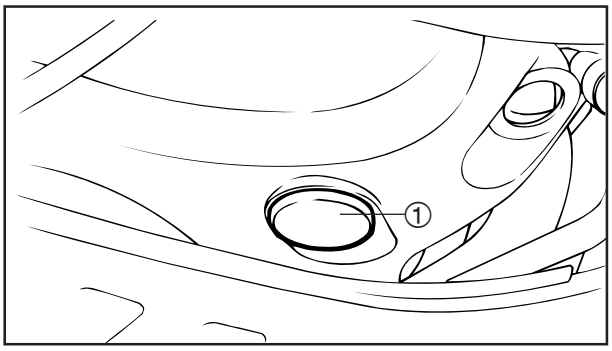
The following procedure applies to all of the valves.

NOTE:

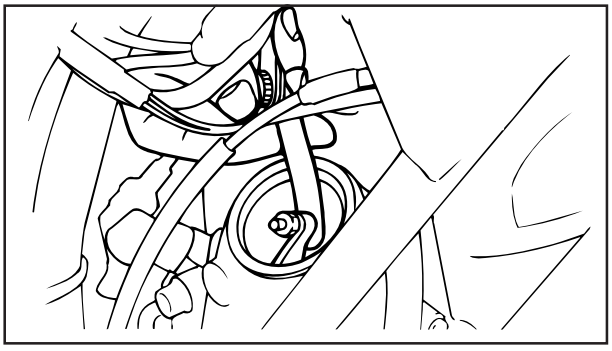
- Valve clearance adjustment should be made on a cold engine, at room temperature.
- When the valve clearance is to be measured or adjusted, the piston must be at top dead center (TDC) on the compression stroke.

1. Remove:
   - cover
   - rear carrier
   - side cover (right,left)
   - hook
   - front cover
   - spark plug cap

   Refer to “COVER AND PANEL”.



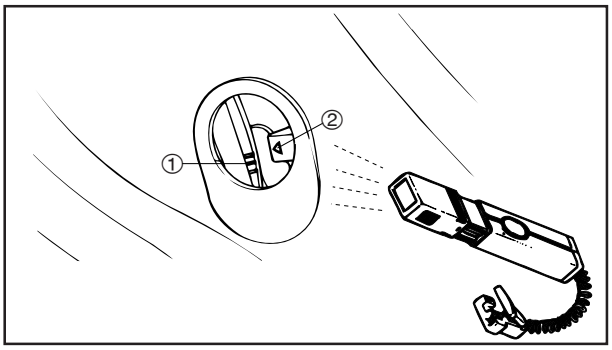
2. Remove:
   - spark plug
   - engine oil cap
   - valve cover (exhaust)
   - cap①



3. Measure:
   - valve clearance

   Out of specification → Adjust.

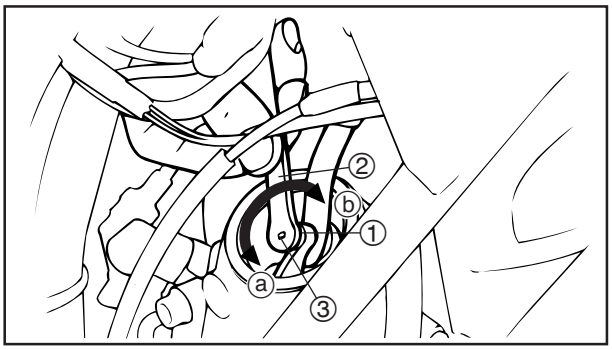
Valve clearance (cold)
Intake valve
0.08 ~ 0.12 mm (0.003 ~ 0.005 in)
Exhaust valve
0.13 ~ 0.17 mm (0.005 ~ 0.007 in)



****

a. Turn the crankshaft counterclockwise.
b. When the piston is at TDC on the compression stroke, align the punch mark in the camshaft sprocket with the stationary on the cylinder head.
c. Align the TDC mark ① on the magneto rotor with the stationary pointer ② on the crankcase.
d. Measure the valve clearance with a thickness gauge.
   Out of specification → Adjust.

****

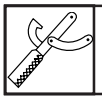


4. Adjust:
   ● valve clearance

****

a. Loosen the locknut ①.
b. Insert a thickness gauge ② between the end of the adjusting screw and the valve tip.
c. Turn the adjusting screw ③ in direction ⓐ or ⓑ until the specified valve clearance is obtained.

Direction ⓐ	Valve clearance is increased.
Direction ⓑ	Valve clearance is decreased.



Tappet adjusting tool
90890-01311 (YM-08035-A)

d. Hold the adjusting screw to prevent it from moving and tighten the locknut to specification.
   ● locknut

7 Nm (0.7 m • kg, 5.1 ft • lb)

e. Measure the valve clearance again.
f. If the valve clearance is still out of specification, repeat all of the valve clearance adjustment steps until the specified clearance is obtained.

****

5. Install:
   - cap
   - spark plug

	12.5 Nm (1.25 m • kg, 9 ft • lb)

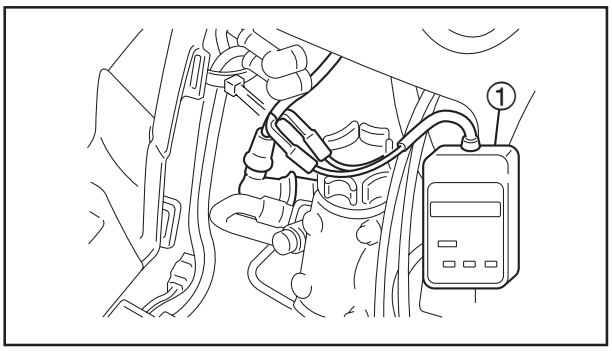
   - valve cover (exhaust)
   - engine oil cap
6. Install:
   - spark plug cap
   - front cover
   - hook
   - side cover (right,left)
   - rear carrier
   - cover

   Refer to “COVER AND PANEL”.

EAS00054
ADJUSTING THE ENGINE IDLING SPEED

NOTE:
Prior to adjusting the engine idling speed, 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. Connect:
   - engine tachometer ①
     (onto the spark plug lead of cylinder)

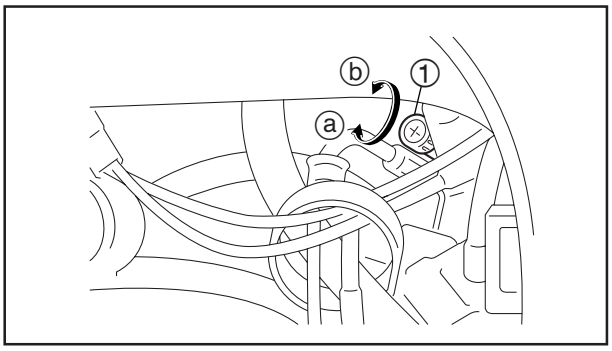
	Engine tachometer **90890-03113 (YU-08036-C)**

3. Check:
   - engine idling speed
     Out of specification → Adjust

	Engine idling speed **1600 ~ 1700 r/min**

4. Adjust:
   - engine idling speed

****



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

Direction ⓐ	Engine idling speed is increased.
Direction ⓑ	Engine idling speed is decreased.

****

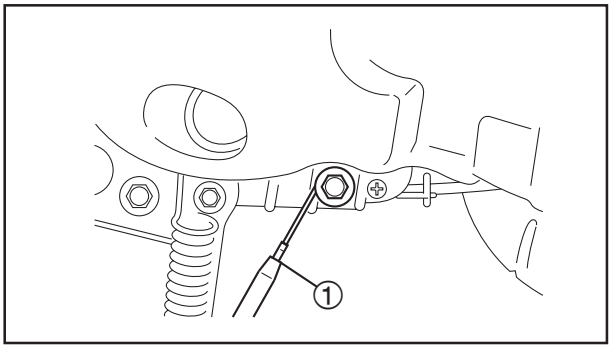
5. Adjust:
   - throttle cable free play
     Refer to “ADJUSTING THE THROTTLE CABLE FREE PLAY”.

	Throttle cable free play (at the flange of the throttle grip) **3 ~ 5 mm (0.12 ~ 0.20 in)**

CHECKING THE EXHAUST GAS AT IDLE
(Measuring the exhaust gas at idle[when air induction system is operation])

1. Stand the scooter on a level surface.

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



2. Install:
   - pocket tester①.
     (onto the engine oil drain bolt)
   - engine tachometer
     (onto the spark plug lead)

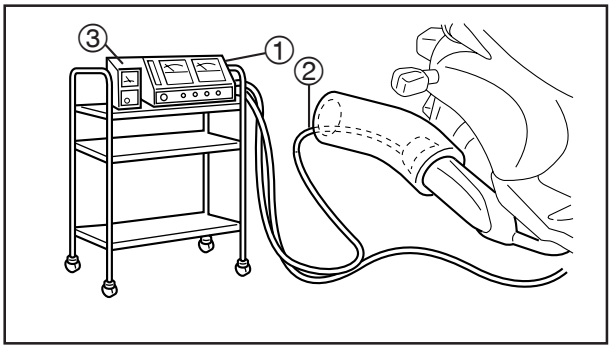
Pocket tester
90890-03132 (YU-03112-C)
Engine tachometer
90890-03113 (YU-08036-C)

3. Start the engine and warm it up until the specified oil temperature is reached.

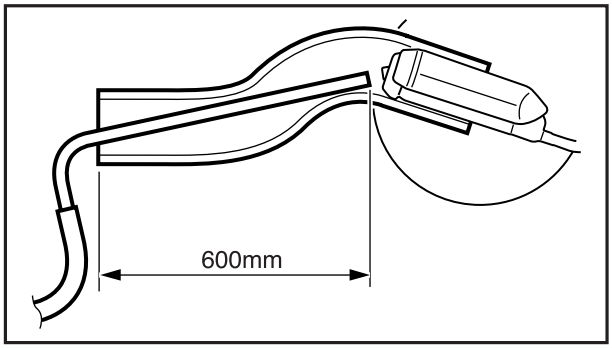
Oil temperature
70~80°C

4. Measure:
   - engine idling speed
     Out of specification → Adjust.
     Refer to "ADJUSTING THE ENGINE IDLING SPEED"

Engine idling speed
1600 ~ 1700 r/min



5. Install:
   - carbon monoxide and hydrocarbon tester①.
   - sampling probe②.
   - engine tachometer③.



NOTE:

- Since it is necessary to insert the sampling probe 600mm into the exhaust pipe, be sure to use a heat-resisant rubber tube as shown in the illustration.
- Be sure to set the heat-resistant rubber tube so that exhaust gas does not leak out.
- Before using the carbon monoxide and hydrocarbon tester, be sure to read the user,s manual.

6. Measure:
   - carbon monoxide density
   - hydrocarbon density

Carbon monoxide density (when air induction system is operating)
0.2%~1.4%
hydrocarbon density (when air induction system is operating)
1000ppm below

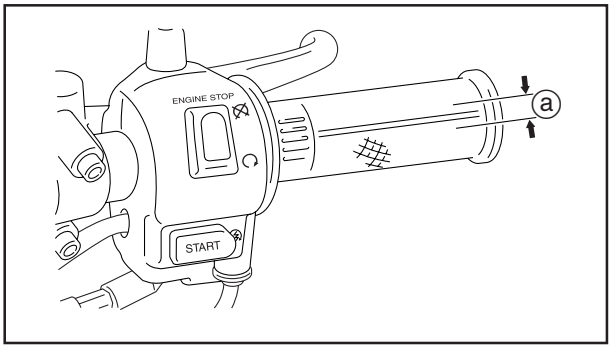
Out of specification → Check air induction system.
Refer to “AIR INDUCTION SYSTEM” in chapter 6.

EAS00057

ADJUSTING THE THROTTLE CABLE FREE PLAY

NOTE:

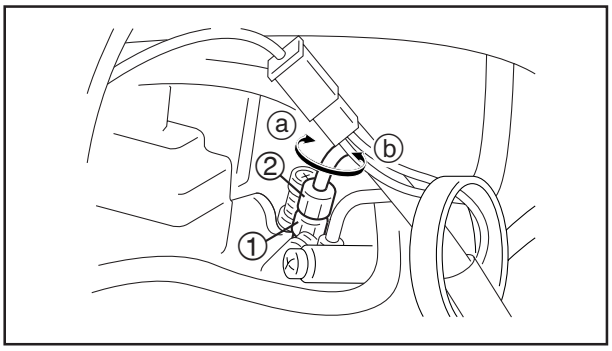
Prior to adjusting the throttle cable free play, the engine idling speed should be adjusted properly.



1. Check:
   - throttle cable free play ⓐ
     Out of specification → Adjust.

Throttle cable free play (at the flange of the throttle grip)
3 ~ 5 mm (0.12 ~ 0.20 in)

2. Remove:
   - cover
   - rear carrier
   - side cover (right)
     Refer to “COVER AND PANEL”.
3. Adjust:
   - throttle cable free play



****

Carburetor side

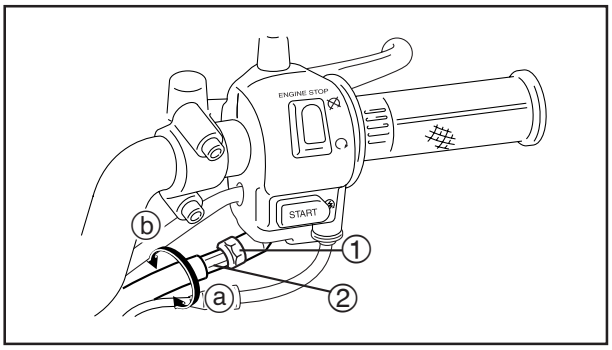
a. Loosen the locknut ①.
b. Turn the adjusting nut ② in direction ⓐ or ⓑ until the specified throttle cable free play is obtained.

Direction ⓐ	Throttle cable free play is increased.
Direction ⓑ	Throttle cable free play is decreased.

c. Tighten the locknuts.

NOTE:

If the specified throttle cable free play cannot be obtained on the carburetor side of the cable, use the adjusting nut on the handlebar side.



Handlebar side

a. Loosen the locknut ①.
b. 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.

****

4. Install:
   - side cover (right)
   - rear carrier
   - cover

   Refer to “COVER AND PANEL”.

EAS00060
CHECKING THE SPARK PLUG

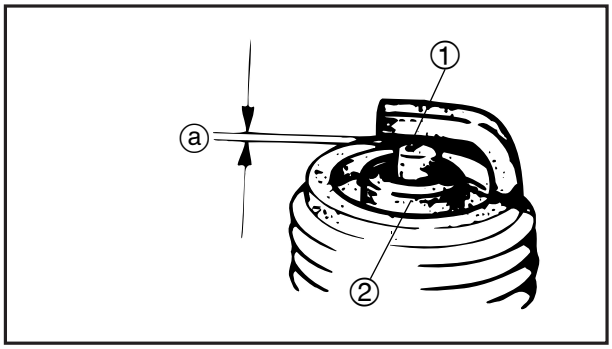
1. Remove:
   - cover
     Refer to “COVER AND PANEL”.
2. Disconnect:
   - spark plug cap
3. Remove:
   - spark plug

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.

4. Check:
   - spark plug type
     Incorrect → Change.

Spark plug type (manufacturer)
CR7E (NGK)

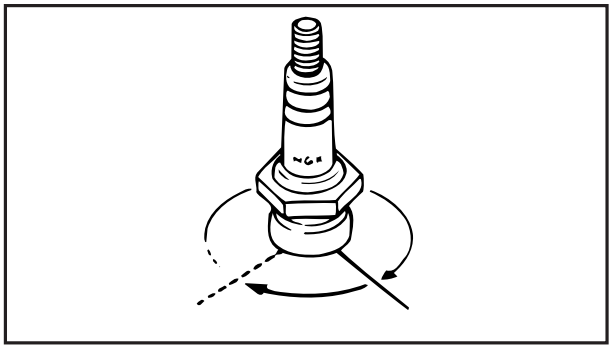


5. Check:
   - electrode ①
     Damage/wear → Replace the spark plug.
   - insulator ②
     Abnormal color → Replace the spark plug.
     Normal color is medium-to-light tan.
6. Clean:
   - spark plug
     (with a spark plug cleaner or wire brush)
7. Measure:
   - spark plug gap ⓐ
     (with a wire Thickness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

Spark plug gap
0.7 ~ 0.8 mm (0.028 ~ 0.032 in)

8. Install:
   - spark plug

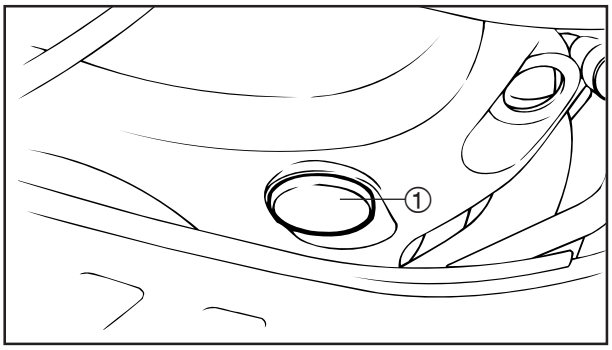
12.5 Nm (1.25 m • kg, 9 ft • lb)



NOTE:

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

9. Connect:
   - spark plug cap
10. Install:
    - cover
      Refer to “COVER AND PANEL”.



EAS00062

CHECKING THE IGNITION TIMING

NOTE:

Prior to checking the ignition timing, check the wiring connections of the entire ignition system. Make sure all connections are tight and free of corrosion.

1. Remove:
   cap ①
2. Attach:
   timing light
   engine tachometer
   (onto the spark plug lead of cylinder)

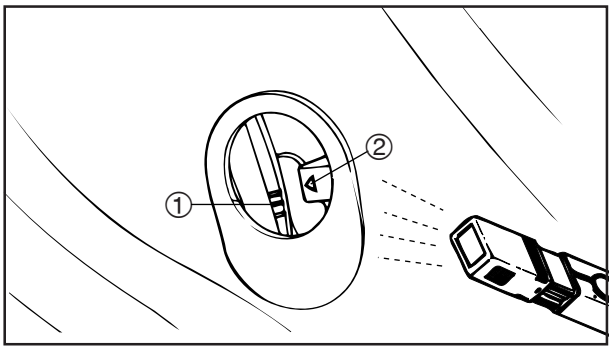
Timing light
90890-03141 (YU-03141)
Engine tachometer
90890-03113 (YU-08036-C)

3. Check:
   ignition timing

****

a. Start the engine, warm it up for several minutes, and then let it run at the specified engine idling speed.

Oil temperture
70~80°C
Engine idling speed
1600 ~ 1700 r/min



b. Check that the mark ① on the magneto rotor is within the firing range ② on the crankcase .
   Incorrect firing range→ Check the ignition system.

NOTE:

The ignition timing is not adjustable.

****

4. Remove:
   - timing light
   - engine tachometer
5. Install:
   - cap

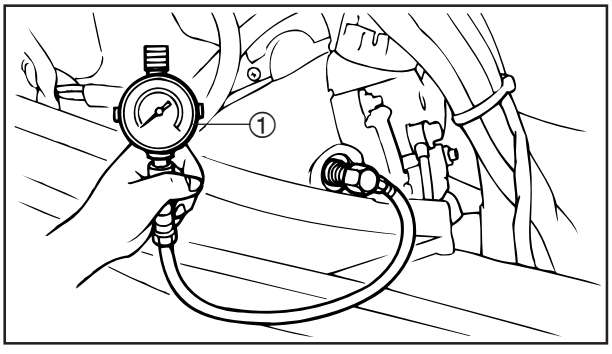
EAS00067

MEASURING THE COMPRESSION PRESSURE

NOTE:
Insufficient compression pressure will result in a loss of performance.

1. Measure:
   - valve clearance
     Out of specification → Adjust
     Refer to “ADJUSTING THE VALVE CLEARANCE”.
2. Start the engine, warm it up for several minutes, and then turn it off.
3. Remove:
   - cover
   - rear carrier
   - side cover (right,left)
   - hook
   - front cover
     Refer to “COVER AND PANEL”.
4. Disconnect:
   - spark plug cap
5. 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.



6. Install:
   - compression gauge ①

Compression gauge
90890-03081
YU-33223

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

Compression pressure (at sea level)
Minimum
827 kPa (8.27 kg/cm², 400r/min)
Standard
950 kPa (9.5 kg/cm², 400r/min)
Maximum
1064 kPa (10.64 kg/cm², 400r/min)

****

a. Set the main switch to "ON".
b. 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.

c. If the compression pressure is above the maximum specification, check the cylinder head, valve surfaces, and piston crown for carbon deposits.
   Carbon deposit → Eliminate.
d. If the compression pressure is below the minimum specification, pour a teaspoonful engine of oil into the spark plug bore and measure again.
   Refer to the following table.

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

****

8. Remove:
   - compression gauge
9. Install:
   - spark plug

12.5 Nm (1.25 m • kg, 9ft • lb)

10. Connect:
    - spark plug cap

11. Install:
    - front cover
    - hook
    - side cover (right,left)
    - rear carrier
    - cover

    Refer to “COVER AND PANEL”.

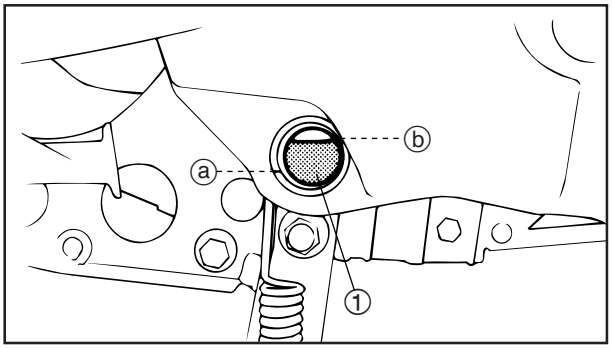
EAS00069

CHECKING THE ENGINE OIL LEVEL

1. Stand the scooter on a level surface.

NOTE:

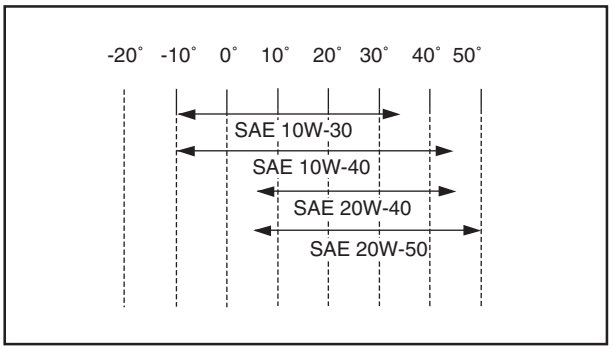
- Place the scooter on a suitable stand.
- Make sure the scooter is upright.



2. Start the engine, warm it up for several minutes, and then turn it off.
3. Check:
   - engine oil level ①

   The engine oil level should be between the minimum level mark ⓐ and maximum level mark ⓑ.

   Below the minimum level mark → Add the recommended engine oil to the proper level.



Recommended oil

Refer to the chart for the engine oil grade which is best suited for certain atmospheric temperatures.

API standard

SE or higher grade

CAUTION:

- **Do not allow foreign materials to enter the crankcase.**

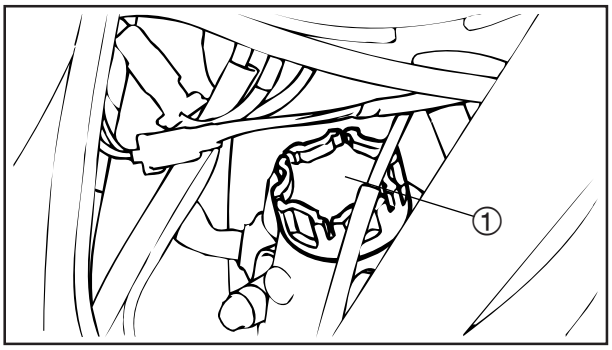
NOTE:

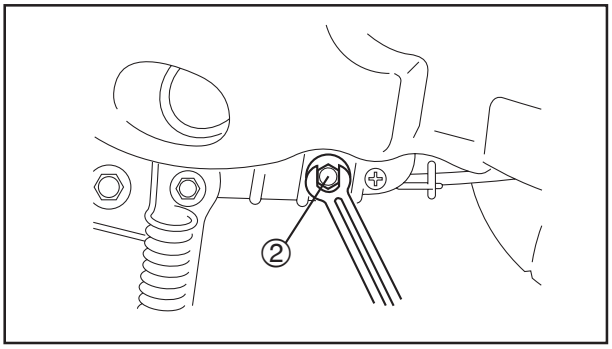
Before checking the engine oil level, wait a few minutes until the oil has settled.

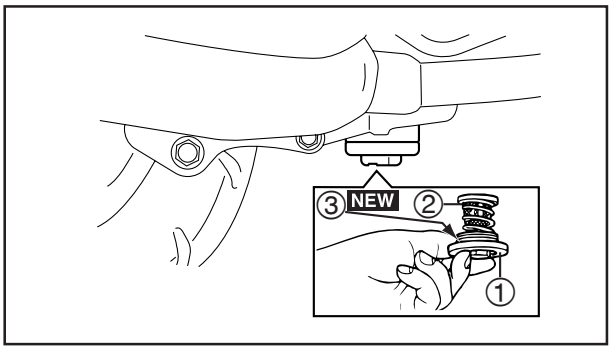
4. Start the engine, warm it up for several minutes, and then turn it off.
5. Check the engine oil level again.

NOTE:

Before checking the engine oil level, wait a few minutes until the oil has settled.







EAS00076

CHANGING THE ENGINE OIL

1. Start the engine, warm it up for several minutes, and then turn it off.
2. Place a container under the engine oil drain bolt.
3. Remove:
   - engine oil filler cap ①
   - engine oil drain bolt ②
     (along with the gasket)
4. Drain:
   - engine oil
     (completely from the crankcase)
5. If the oil filter element is also to be cleaned,
   - perform the following procedure.

****

a. Remove the oil strainer cover ① and oil filter element ②.
b. Replace the O-ring ③
c. Install the oil strainer cover.

	Oil strainer cover **32 Nm (3.2 m • kg, 23.1 ft • lb)**

****

6. Install:
   - engine oil drain bolt
     (along with the gasket)

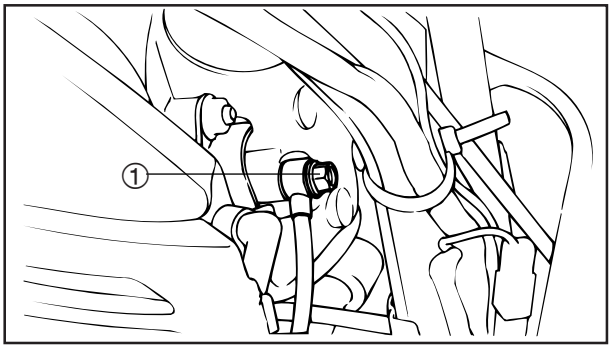
	23 Nm (2.3 m • kg, 16.6 ft • lb)

7. Fill:
   - crankcase
     (with the specified amount of the recommended engine oil)

	Periodic oil change **1.0 L(0.92 Imp qt, 1.09 US qt)**

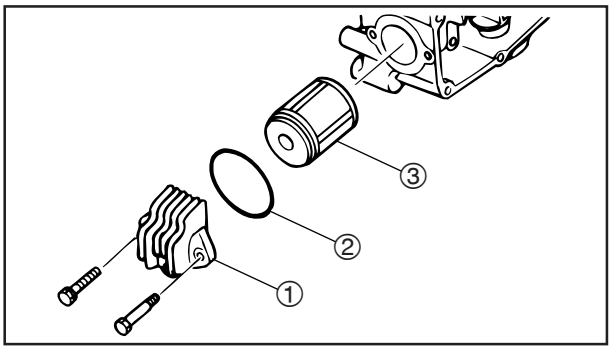
8. Install:
   - engine oil filler cap
9. Start the engine, warm it up for several minutes, and then turn it off.
10. Check:
    - engine
      (for engine oil leaks)

11. Check:
    - engine oil level
      Refer to “CHECKING THE ENGINE OIL LEVEL”.
12. Check:
    - engine oil pressure
      Refer to “CHECKING THE ENGINE OIL PRESSURE”.

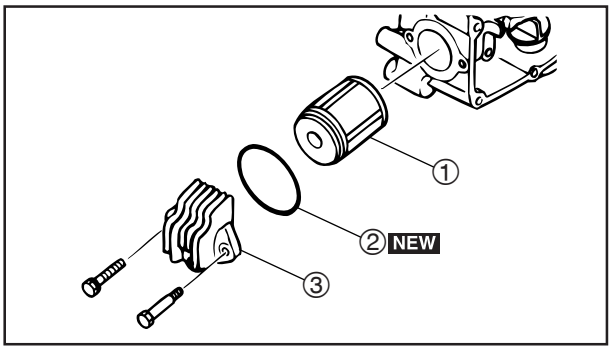


CHANGING THE ENGINE OIL FILTER ELEMENT

1. Drain:
    - engine oil
2. Remove:
    - oil delivery pipe bolt ①
    - copper washers



3. Remove:
    - oil filter element cover①
    - o-ring②
    - oil filter element ③



4. Install:

CAUTION:

Be careful because it causes an engine trouble when the attachment direction of the oil filter element is mistaken.

- oil filter element ①
- o-ring② **New**
- oil filter element cover③

8 Nm (0.8 m • kg, 5.8 ft • lb)

- copper washers
- oil delivery pipe bolt

10 Nm (1.0 m • kg, 7.2 ft • lb)

CAUTION:

Check it under the condition that a check bolt is surely loosened because oil erupts when a check bolt is removed and an engine is started.

5. Fill:
   - crankcase

   Refer to “CHECKING THE ENGINE OIL “.

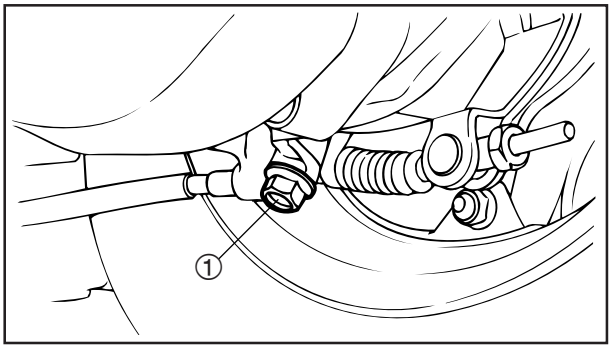
Quantity
Total amount
1.2L (1.10 Imp qt, 1.31 US qt)
Without oil filter element replacement
1.2L (1.10 Imp qt, 1.31 US qt)
Periodic oil change
1.0 L (0.92 Imp qt, 1.09 US qt)

CHANGING THE TRANSMISSION OIL

1. Stand the scooter on a level surface.

NOTE:
- Stand the scooter on a suitable stand.
- Make sure that the scooter up right.

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

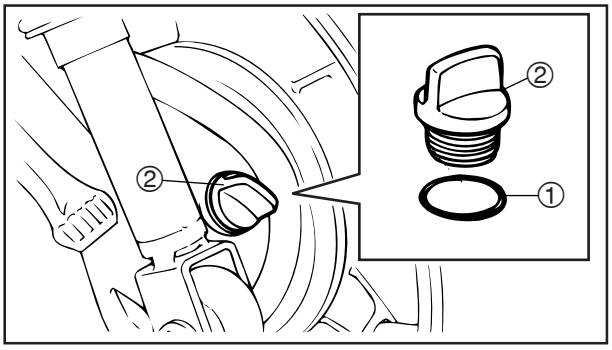


4. Remove:
   - Oil filler cap
   - Transmission oil drain bolt ①
   - Completely drain the transmission oil
5. Install:
   - transmission oil drain bolt

	23 Nm (2.3 m • kg, 16.6 ft • lb)

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

Total amount
0.15L(0.14 Imp qt, 0.16 US.qt)
Periodic oil change
0.13L(0.12 Imp qt, 0.14 US.qt)
Recommended oil
SAE85W140SE



7. Install:
   - o-ring①
   - oil filler cap②
8. Start the engine for several minutes to warm it up and check for the oil leakage.

EAS00077

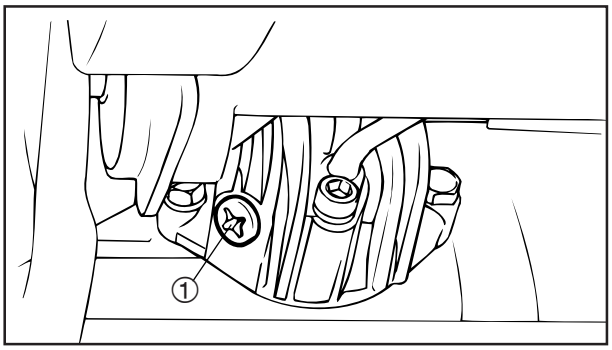
MEASURING THE ENGINE OIL PRESSURE

1. Check:
   - engine oil level
     Below the minimum level mark → Add the recommended engine oil to the proper level.
     Refer to “CHECKING THE ENGINE OIL LEVEL”.
2. Start the engine, warm it up for several minutes, and then turn it off.

CAUTION:

When the engine is cold, the engine oil will have a higher viscosity, causing the engine oil pressure to increase. Therefore, be sure to measure the engine oil pressure after warming up the engine.

3. Remove:
   - cover
     Refer to “COVER AND PANEL”.



4. Lossen:
   - gallery bolt ①

⚠WARNING

The engine, muffler and engine oil are extremely hot.

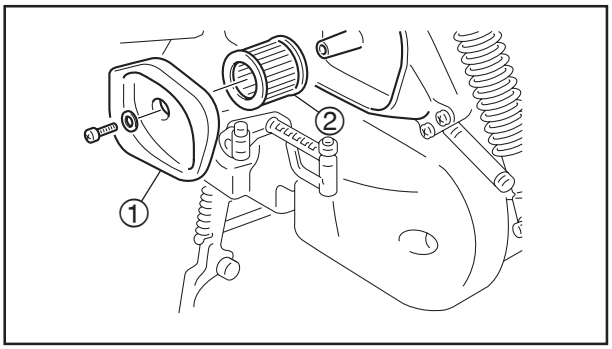
5. Check:
   - engine oil pressure

****

a. Start the engine and keep it idling until engine oil starts to seep from the oil gallery bolt.
   If no engine oil comes out after one minute, turn the engine off so that it will not seize.
b. Check the engine oil passages, the oil filter and oil pump for damage or leakage.Refer to”OIL PUMP” in chapter 5.
c. Start the engine after solving the problem(s) and check the engine oil pressure again.

****

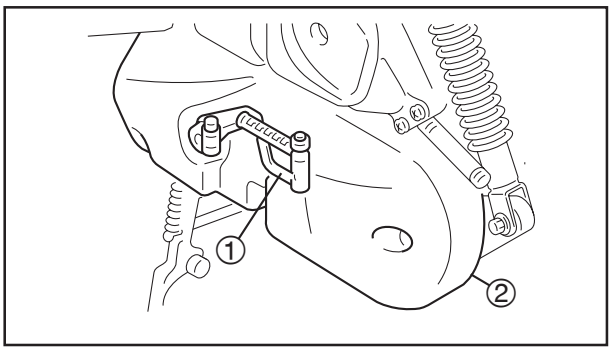
6. Install:
   - gallery bolt



EAS00086

CLEANING THE AIR FILTER ELEMENT

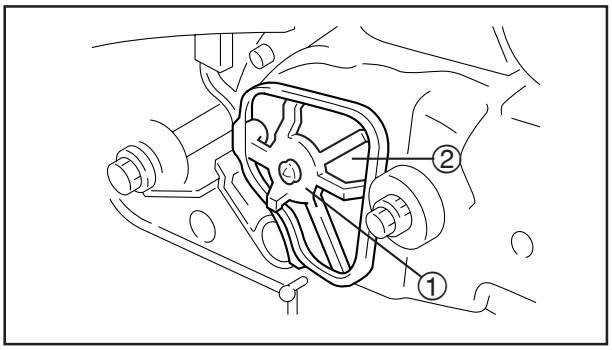
1. Remove:
   - air filter case cover ①
   - air filter element②
2. Check:
   - air filter element
     Damage → Replace.



EAS00091

CLEANING THE V-BELT CASE AIR FILTER ELEMENT

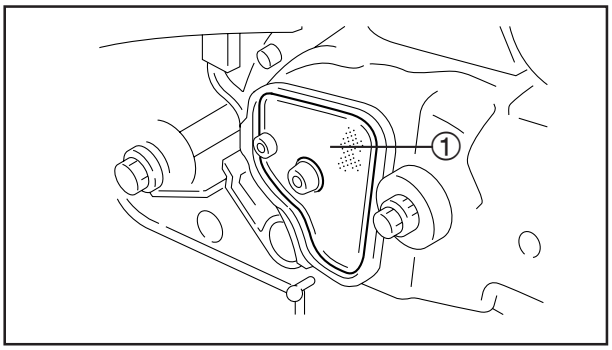
1. Remove:
   - kick starter ①
   - damper cover ②



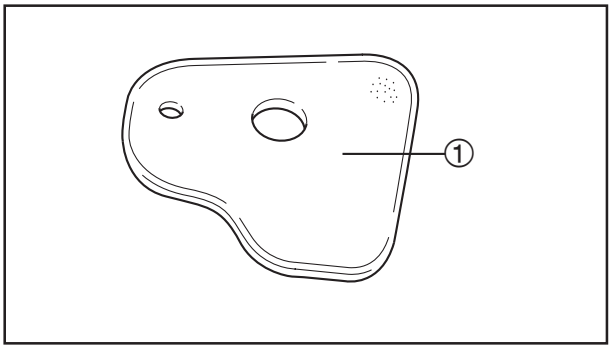
2. Remove:
   - V-belt case air filter element holder①
   - V-belt case air filter element ②

NOTE:

When assembling the element, the yellow side (the coarser side) must face the case cover side of the air cleaner. Wrong side assembling will result in failure of filtering. Moreover, the element should be tightly sealed with the case cover of the crank to prevent from air leakage.



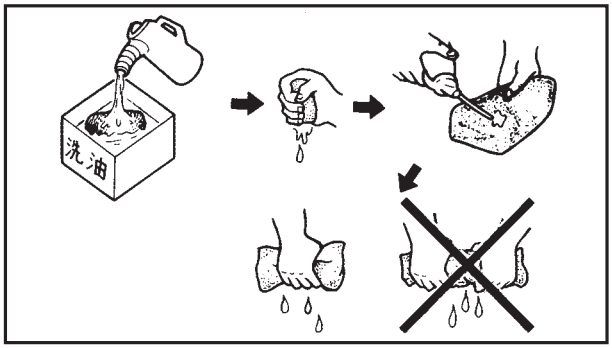
3. Check:
   - V-belt case air filter element ①
     Damage → Replace.



4. Clean:
   - V-belt case air filter element ① (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:

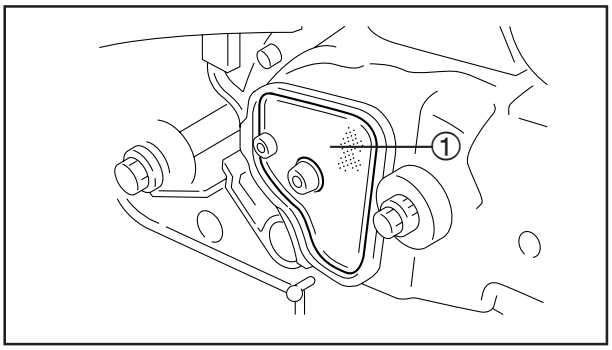
After cleaning, gently squeeze the V-belt case air filter element to remove the excess solvent.

CAUTION:

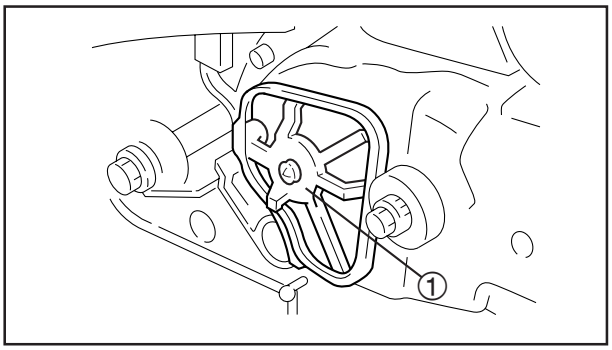
Do not twist the V-belt case air filter element when squeezing it.

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.

	Recommanded oil **Engine oil**

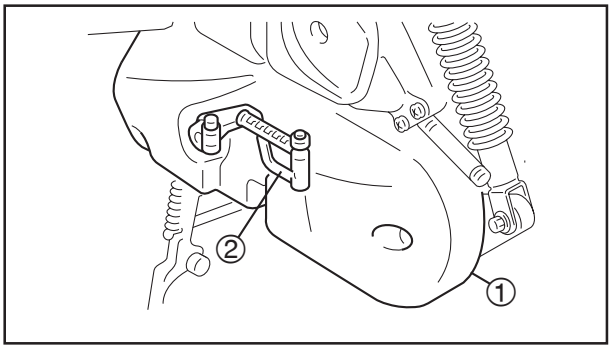


6. Install:
   - element ①



7. Install:
   - element holder①

	7 Nm (0.7 m • kg, 5.1 ft • lb)



8. Install:
   - damper cover ①
   - kick starter ②

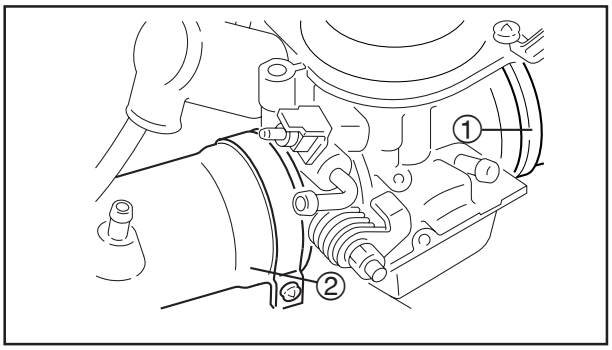
	23 Nm (2.3 m • kg, 16.6 ft • lb)

EAS00094

CHECKING THE CARBURETOR JOINT AND INTAKE MANIFOLD

1. Remove:
   - cover
   - rear carrier
   - side cover (right,left)
   - seat
   - hook
   - front cover
   - fuel tank cap
   - rear cover
   - trunk

   Refer to “COVER AND PANEL”.



2. Check:
   - carburetor joint ①
   - intake manifold ②

   Cracks/damage → Replace.
   Refer to “CARBURETOR” in chapter 6.
3. Install:
   - trunk
   - rear cover
   - fuel tank cap
   - front cover
   - hook
   - seat
   - side cover (right,left)
   - rear carrier
   - cover

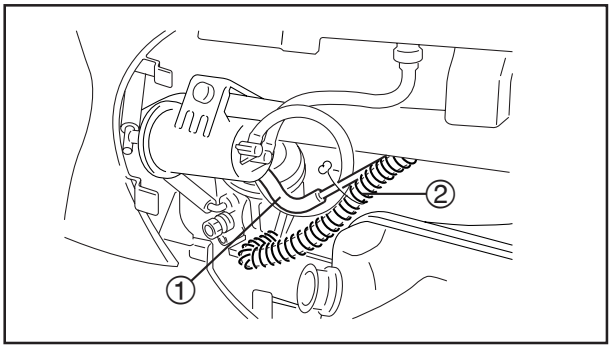
   Refer to “COVER AND PANEL”.

EAS00096
CHECKING THE FUEL AND VACUUM HOSES

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

1. Remove:
   - cover
   - rear carrier
   - side cover (left)

   Refer to “COVER AND PANEL”.



2. Check:
   - vacuum hose ①
   - fuel hose ②

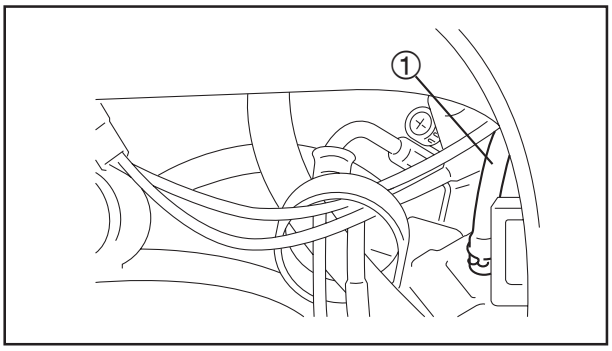
   Cracks/damage → Replace.
   Loose connection → Connect properly.
3. Install:
   - side cover (left)
   - rear carrier
   - cover

   Refer to “COVER AND PANEL”.

EAS00098
CHECKING THE CRANKCASE BREATHER HOSE

1. Remove:
   - cover

   Refer to “COVER AND PANEL”.



2. Check:
   - crankcase breather hose ①

   Cracks/damage → Replace.
   Loose connection → Connect properly.

CAUTION:

Make sure the crankcase breather hose is routed correctly.

3. Install:
   - cover

   Refer to “COVER AND PANEL”.

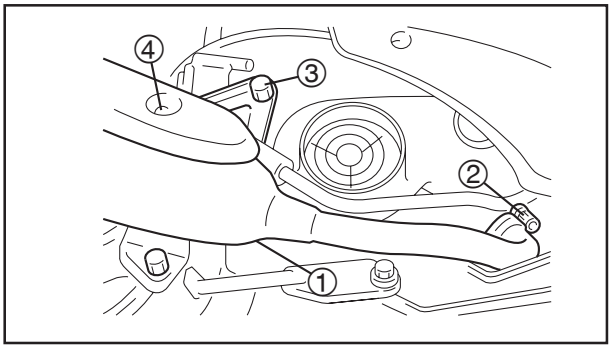
EAS00099

CHECKING THE EXHAUST SYSTEM

The following procedure applies to all of the muffler assembly and gaskets.

1. Remove:
   - hose(from air fi/ter)
   - vacuum hose
   - hose(to cylinder head)
   - air cut-off valve assembly

   Refer to “AIR INDUCTION SYSTEM”in chapter 6.



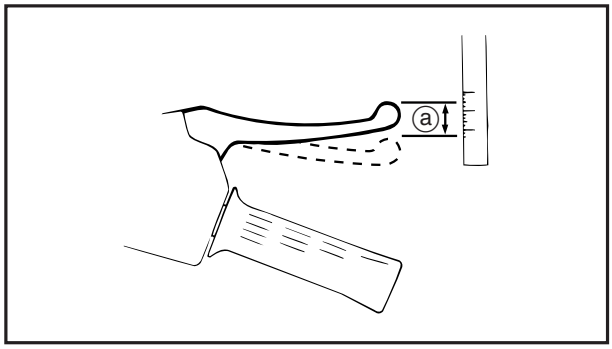
2. Check:
   - muffler assembly ①
     Cracks/damage → Replace.
   - gasket
     Exhaust gas leaks → Replace.

3. Check:
   - tightening torque

Muffler assembly nut②
10 Nm (1.0 m • kg, 7.2 ft • lb)
Muffler and rear arm bolt ③
31 Nm (3.1 m • kg, 22.4 ft • lb)
Protector screw ④
7 Nm (0.7 m • kg, 5.1 ft • lb)

4. Install:
   - air cut-off valve assembly
   - hose(to cylinder head)
   - vacuum hose
   - hose(from air fi/ter)

   Refer to “AIR INDUCTION SYSTEM”in chapter 6.



EAS00108

CHASSIS

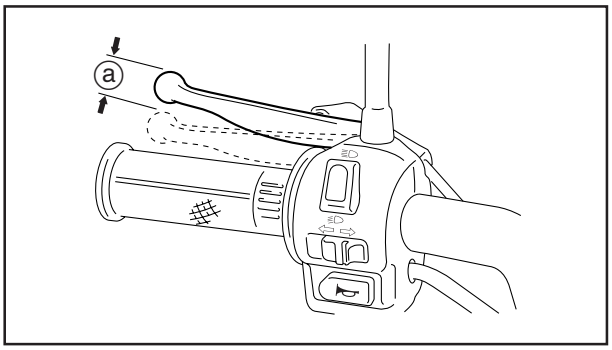
ADJUSTING THE FRONT BRAKE

1. Check:
   - brake lever free play ⓐ

Brake lever free play (at the end of the brake lever)
3 ~ 5mm (0.12 ~ 0.20 in)

⚠WARNING

A soft or spongy feeling in the brake lever can indicate the presence of air in the brake system. Before the vehicle is operated, the air must be removed by bleeding the brake system. Air in the brake system will considerably reduce braking performance and could result in loss of control and possibly an accident. Therefore, check and, if necessary, bleed the brake system.



EAS00114

ADJUSTING THE REAR BRAKE

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

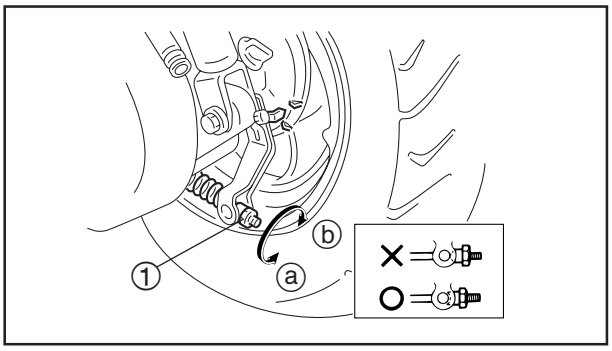
Brake lever free play
10~20 mm(0.4~0.8 in)

2. Adjust:
   - brake lever free play

****

Rear wheel side

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.

****

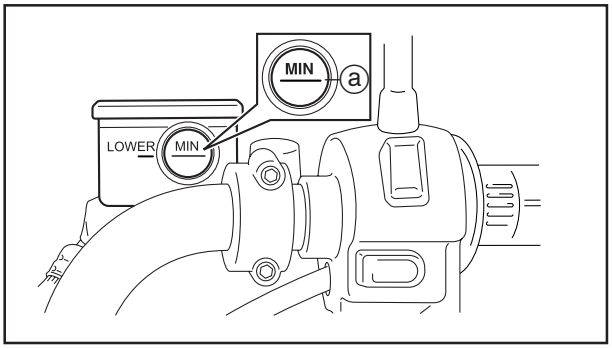
EAS00116

CHECKING THE BRAKE FLUID 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:
   - brake fluid level
     Below the minimum level mark ⓐ → Add the recommended brake fluid to the proper level.

Recommended brake fluid
DOT 4

⚠WARNING

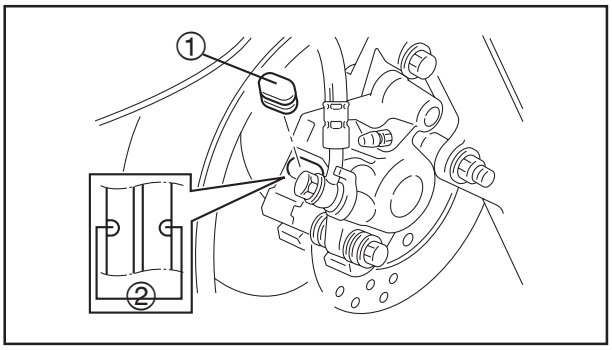
- **Use only the designated brake fluid. Other brake fluids may cause the rubber seals to deteriorate, causing leakage and poor brake performance.**
- **Refill with the same type of brake fluid that is already in the system. Mixing brake fluids may result in a harmful chemical reaction, leading to poor brake performance.**
- **When refilling, be careful that water does not enter the brake fluid reservoir. Water will significantly lower the boiling point of the brake fluid and could cause vapor lock.**

CAUTION:

Brake fluid may damage painted surfaces and plastic parts. Therefore, always clean up any spilt brake fluid immediately.

NOTE:

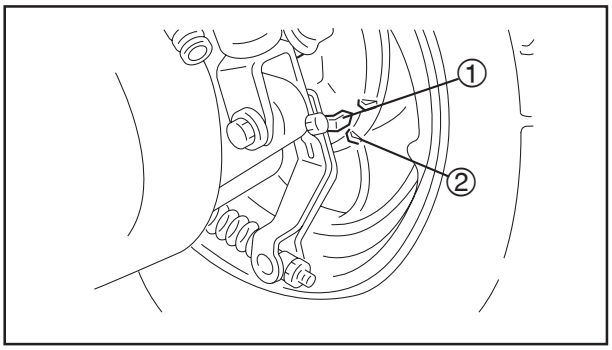
In order to ensure a correct reading of the brake fluid level, make sure the top of the brake fluid reservoir is horizontal.



EAS00117
CHECKING THE FRONT BRAKE PADS

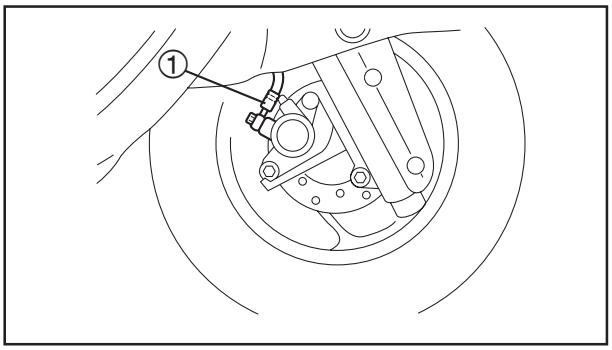
The following procedure applies to all of the brake pads.

1. Remove:
   - cap ①
2. Operate the brake.
3. Check:
   - front brake pad
     Wear indicators ② almost touch the brake disc → Replace the brake pads as a set.
     Refer to "REPLACING THE FRONT BRAKE PADS" in chapter 4.



EAS00126
CHECKING THE REAR 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 "REAR WHEEL AND REAR BRAKE" in chapter 4.



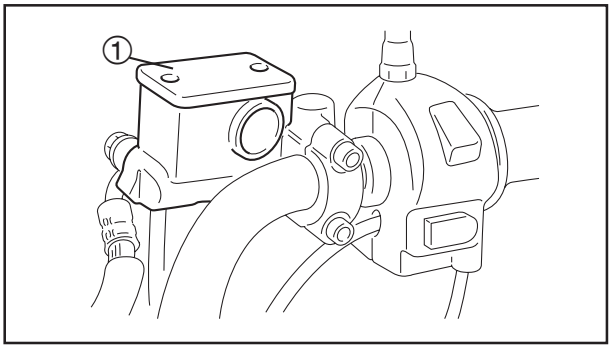
EAS00130
CHECKING THE FRONT BRAKE HOSE

1. Check:
   - brake hose ①
     Cracks/damage/wear → Replace.
2. Check:
   - brake hose clamp
     Loose connection → Tighten the clamp bolt.
3. Hold the scooter upright and apply the front
   - brake several times.
4. Check:
   - brake hose
     Brake fluid leakage → Replace the damaged hose.
     Refer to "FRONT AND REAR BRAKES" in chapter 4.

BRAKE FLUID CHANGE

⚠WARNING

Should you feel loose when pulling Brake, it is possibly due to leaking of Brake fluid of mixing with air which led to the ineffectiveness of Brake. Since poor performance of Brake caused by mixing with air may trigger accidents, therefore inspection must be carried out prior to riding, and expel the air if necessary.



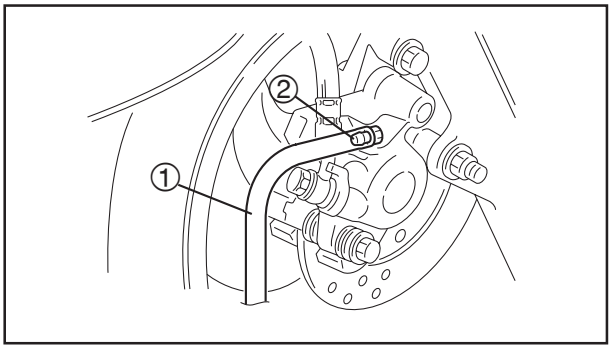
1. Place the scooter in standing position vertically on a flat floor.

NOTE:

- Use the main stand to place the scooter in upright position.
- During change, be sure the scooter is standing vertically.

2. Remove:
   - reservoir cap ①

   Remove the reservoir cap of the master cylinder at horizontal condition.
3. Bleed.
   - hydraulic brake system.



****

a. Securely connect the transparent vinyl hose ① to the fluid screw ②.
b. Place the other end of the hose in the oil pan (receiving pan).
c. Slowing operate the brake lever for several times.

   Repeat the procedures until no more brake fluid overflows from the fluid screw.

CAUTION:

Brake fluid can cause damages to painting or plastic surfaces, so be sure to wipe clean the spilled brake fluid.

d. Tighten:
   - bleed screw

	6Nm (0.6m • kg, 4.3 ft • lb)

e. Remove the reservoir diaphragm.
f. Fill proper volume of designated brake fluid into the reservoir of the master cylinder.
   Refer to “CHECKING THE BRAKE FLUID LEVEL”.
g. Operate brake lever slowly for several times. Repeat the procedures until the small amount of air (air bubbles) in the reservoir tank disappears, and the brake lever feels heavy.
h. Bleed:
   Refer to “BLEEDING THE HYDRAULIC BRAKE SYSTEM”.

⚠WARNING

Following air expelling for the hydraulic brake, please verify the actuating condition of the brake.

****

4. Install:
   - reservoir cap

	1.6Nm (0.16m • kg, 1.2 ft • lb)

EAS00133

BLEEDING THE HYDRAULIC BRAKE SYSTEM

⚠WARNING

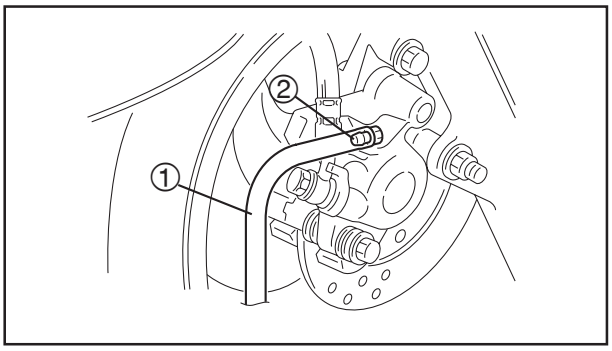
Bleed the hydraulic brake system whenever:

- **the system is disassembled.**
- **a brake hose is loosened, disconnected or replaced.**
- **the brake fluid level is very low.**
- **brake operation is faulty.**

1. Remove:
   - reservoir cap

NOTE:

- Be careful not to spill any brake fluid or allow the brake master cylinder reservoir to overflow.
- When bleeding the hydraulic brake system, make sure there is always enough brake fluid before applying the brake. Ignoring this precaution could allow air to enter the hydraulic brake system, considerably lengthening the bleeding procedure.
- If bleeding is difficult, it may be necessary to let the brake fluid settle for a few hours. Repeat the bleeding procedure when the tiny bubbles in the hose have disappeared.



2. Bleed:
   - hydraulic brake system

****

a. Fill the brake fluid reservoir to the proper level with the recommended brake fluid.
b. Install the brake master cylinder reservoir diaphragm.
c. Connect a clear plastic hose ① tightly to the bleed screw ②.
d. Place the other end of the hose into a container.
e. Slowly apply the brake lever several times.
f. Fully pull the brake lever without releasing it.
g. Loosen the bleed screw.

NOTE:

Loosening the bleed screw will release the pressure and cause the brake lever to contact the throttle grip.

h. Tighten the bleed screw and then release the brake lever.
i. Repeat steps (e) to (h) until all of the air bubbles have disappeared from the brake fluid in the plastic hose.
j. Tighten the bleed screw to specification.

	**Bleed screw** **6 Nm (0.6 m • kg, 4.3 ft • lb)**

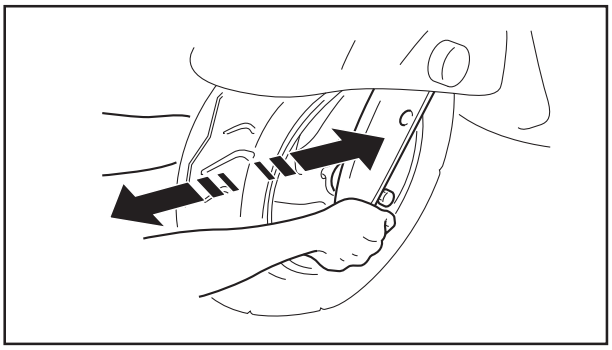
k. Fill the brake fluid reservoir to the proper level with the recommended brake fluid.
Refer to "CHECKING THE BRAKE FLUID LEVEL".

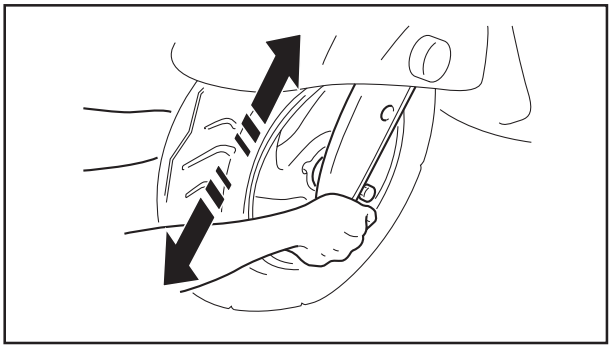
⚠WARNING

After bleeding the hydraulic brake system, check the brake operation.

****

3. Install:
reservoir cap
1.6 Nm (0.16 m • kg, 1.2 ft • lb)





EAS00148

CHECKING AND ADJUSTING THE STEERING HEAD

1. Stand the scooter on a level surface.

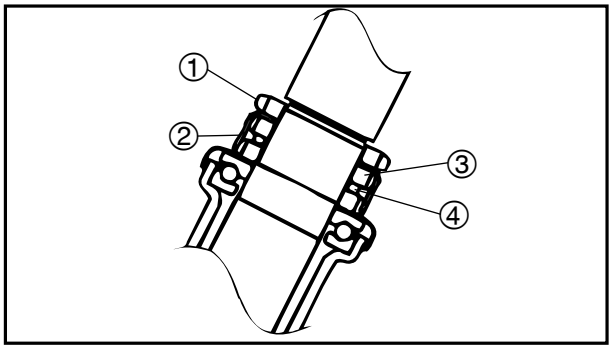
⚠WARNING

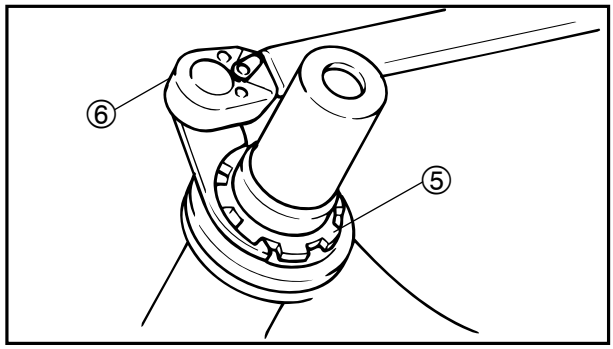
Securely support the scooter so that there is no danger of it falling over.

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:
   - head light cover
   - front turn signal light bracket
   - leg shield 1
     Refer to "COVER AND PANEL".





4. Adjust:
   - steering head

****

a. Remove the upper ring nut ①, the lock washer ②, the center ring nut ③ and the rubber washer ④.
b. Loosen the lower ring nut ⑤ and then tighten it to specification with the steering nut wrench ⑥.

NOTE:

Set the torque wrench at a right angle to the steering nut wrench.

Steering nut wrench
90890-01403
YU-33975

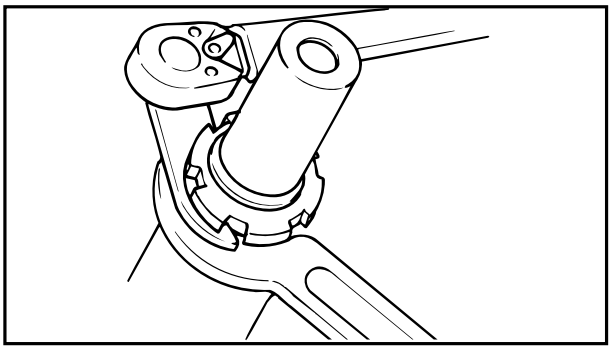
Lower ring nut (initial tightening torque)
28 Nm (2.8 m • kg, 20.3 ft • lb)

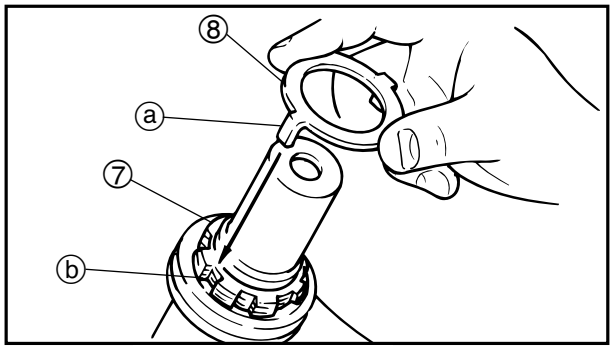
c. Loosen the lower ring nut completely and then tighten it to specification with a steering nut wrench .

⚠WARNING

Do not overtighten the lower ring nut.

Lower ring nut (final tightening torque)
9 Nm (0.9 m • kg, 6.5 ft • lb)





d. Check the steering head for looseness or binding by turning the front fork all the way in both directions. If any binding is felt, remove the lower bracket and check the upper and lower bearings.
Refer to "STEERING HEAD" in chapter 4.
e. Install the rubber washer.
f. Install the center ring nut.
g. Finger tighten the center ring nut ⑦, then align the slots of both ring nuts. If necessary, hold the lower ring nut and tighten the center ring nut until their slots are aligned.
h. Install the lock washer ⑧.

NOTE:
Make sure the lock washer tabs ⓐ sit correctly in the ring nut slots ⓑ.

i. Hold the lower and center ring nuts with a ring nut wrench and tighten the upper steering nut with a ring nut wrench.

Ring nut wrench
90890-01268
YU-01268

Upper ring nut
75 Nm (7.5 m • kg, 54.2 ft • lb)

****

5. Install:
- leg shield 1
- front turn signal light bracket
- head light cover
Refer to "COVER AND PANEL".

EAS00151

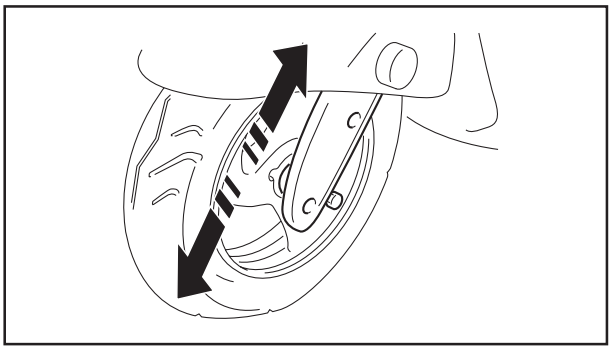
CHECKING THE FRONT FORK

1. Stand the scooter on a level surface.

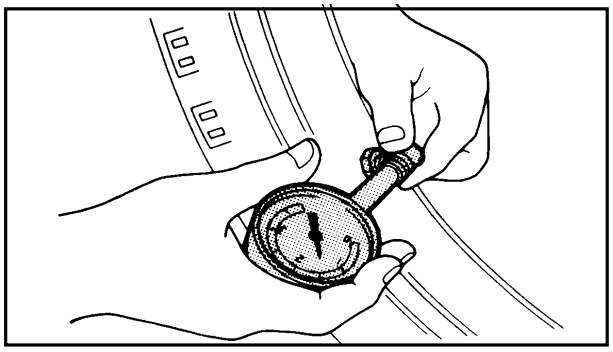
⚠WARNING

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

2. Check:
   - inner tube
     Damage/scratches → Replace.
   - oil seal
     Oil leakage → Replace.
3. Hold the scooter upright and apply the front brake.



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



EAS00163

CHECKING THE TIRES

The following procedure applies to both of the tires.

1. Check:
   - tire pressure

     Out of specification → Regulate.

⚠ WARNING

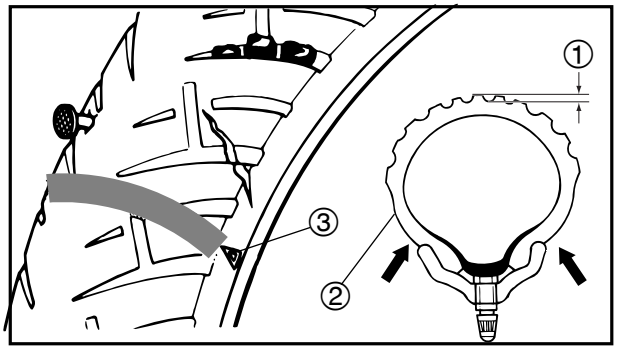
- **The tire pressure should only be checked and regulated when the tire temperature equals the ambient air temperature.**
- **The tire pressure and the suspension must be adjusted according to the total weight (including cargo, rider, passenger and accessories) and the anticipated riding speed.**
- **Operation of an overloaded scooter could cause tire damage, an accident or an injury.**
- **NEVER OVERLOAD THE SCOOTER.**

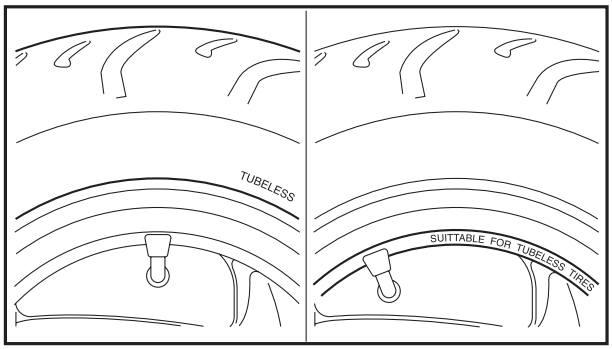
Basic weight (with oil and a full fuel tank)	97 kg (214 lb)	
Maximum load*	253 kg (558 lb)	
Cold tire pressure	Front	Rear
Up to 90 kg load*	150 kPa (1.5 kgf/cm², 22 psi)	200 kPa (2.00 kgf/cm², 29 psi)
90 kg ~ maximum load*	150 kPa (1.5 kgf/cm², 22 psi)	225 kPa (2.25 kgf/cm², 32 psi)

* Total weight of rider, passenger, cargo 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.





2. Check:
   - tire surfaces
     Damage/wear → Replace the tire.

	Minimum tire tread depth 0.8 mm (0.03 in)

① Tire tread depth
② Sidewall
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.**

A Tire
B 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 Taiwan 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

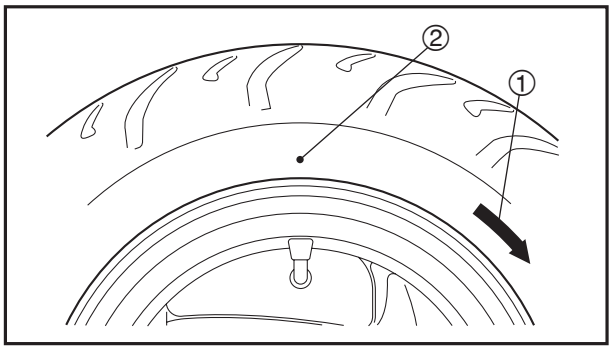
Manufacturer	Model	Size
CHENG SHIN	C-922L	3.50-10 51J

Rear tire

Manufacturer	Model	Size
CHENG SHIN	C- 6007	3.50-10 51J

⚠WARNING

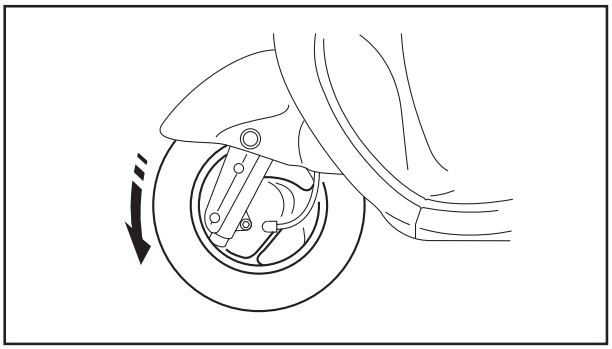
New tires have a relatively low grip on the road surface until they have been slightly worn. Therefore, approximately 100 km should be traveled at normal speed before any high-speed riding is done.

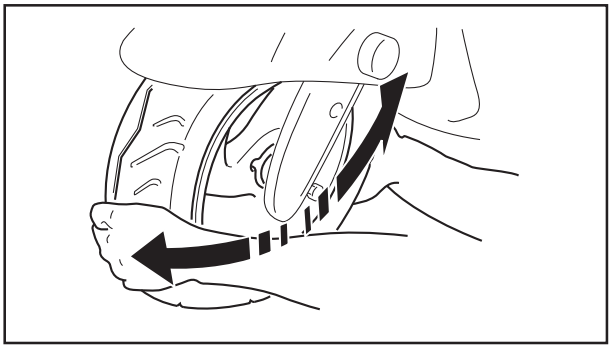


NOTE:

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 inner and outer cables.

⚠WARNING

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

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

Recommended lubricant
Engine oil or a suitable cable lubricant

NOTE:

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

EAS00172

LUBRICATING THE SIDESTAND

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

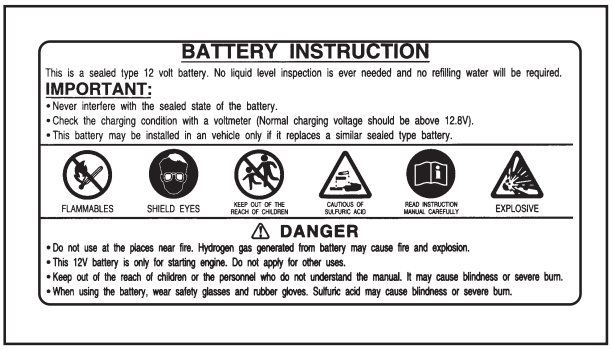
	Recommended lubricant **Lithium-soap-based grease**

EAS00173

LUBRICATING THE CENTERSTAND

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

	Recommended lubricant **Lithium-soap-based grease**



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

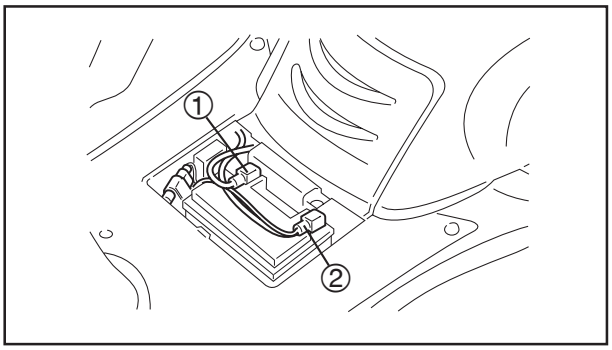
- **Drink large quantities of water or milk followed with milk of magnesia, beaten egg or vegetable oil. Get immediate medical attention.**

CAUTION:

- **This is a sealed battery. Never remove the sealing caps because the balance between cells will not be maintained and battery performance will deteriorate.**
- **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.

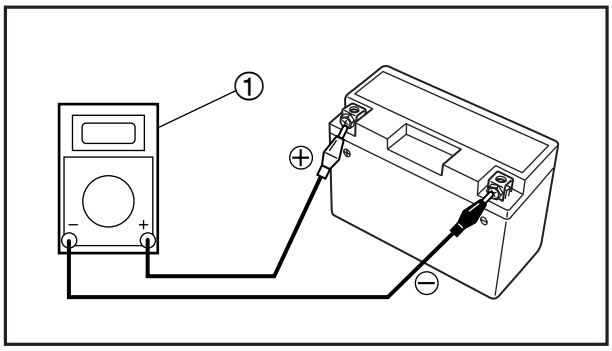
1. Remove:
   - mat
   - battery cover
   Refer to "COVER AND PANEL".



2. Disconnect:
   - battery leads
   (from the battery terminals)

CAUTION:
First, disconnect the negative battery lead ①, and then the positive battery lead ②.

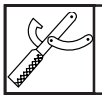
3. Remove:
   - battery



4. Check:
   - battery charge

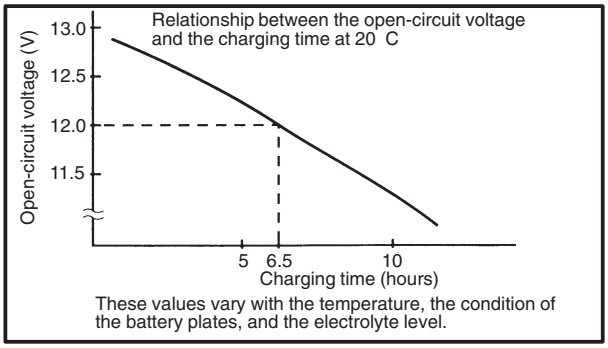
****

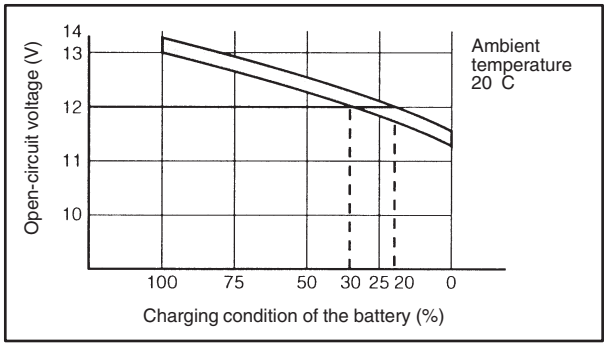
a. Connect a digital pocket tester ① to the battery terminals.

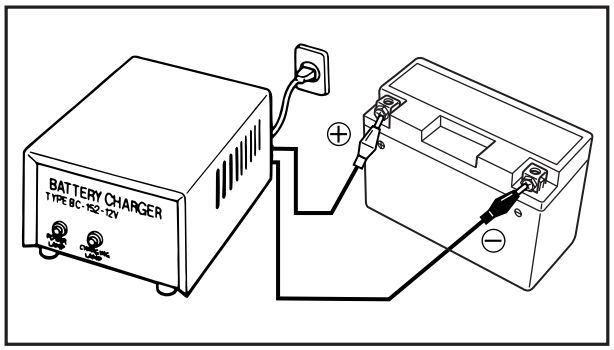
	**Pocket tester** **90890-03132 (YU-03112-C)**

Positive tester probe → positive battery terminal
Negative tester probe → negative battery 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%

****

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

⚠WARNING

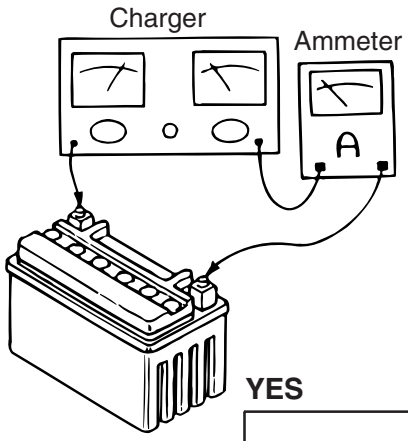
Do not quick charge a battery.

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.**
- **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.**

Charging method using a variable-current (voltage) charger



Measure the open-circuit voltage prior to charging.

NOTE:
Leave the battery unused for more than 30 minutes before measuring its opencircuit voltage.

Connect a charger and ammeter to the battery and start charging.

NOTE:
Set the charging voltage to 16-17 V. (If the charging voltage is lower charging will be insufficient, if it is higher, the battery will be over-charged.)

Is the amperage higher than the standard charging amperage written on the battery?

YES

NO

Adjust the char ging voltage to 20 ~ 25V.

Monitor the amperage for 3 ~ 5 minutes. Is the standard charging amperage exceeded?

YES

NO

Adjust the voltage to obtain the standard charging amperage.

Set the timer to the charging time determined by the opencircuit voltage.
Refer to “CHECKING AND CHARGING THE BATTERY”.

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

If the required charging time exceeds 5 hours, it is advisable to check the charging amperage after 5 hours. If there is any change in the amperage, readjust the voltage to obtain the standard charging amperage.

Leave the battery unused for more than 30 minutes before measuring its open-circuit voltage.
12.8 V ~ Charging is complete.
12.0 ~ 12.7 V ~ Recharging is required.
Under 12.0 V ~ Replace the battery.

Charging method using a constant voltage charger

Measure the open-circuit voltage prior to charging.

NOTE:
Leave the battery unused for more than 30 minutes before measuring its opencircuit voltage.

Connect a charger and ammeter to the battery and start charging.

Is the amperage higher than the standard charging amperage written on the battery?

YES

Charge the battery until the charging voltage reaches 15 V.

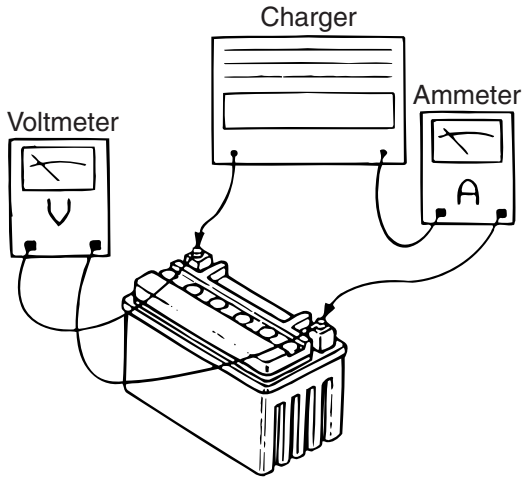
NOTE:
Set the charging time to a maximum of 20 hours.

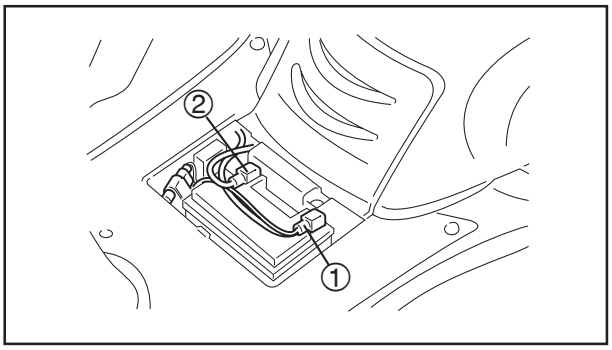
Leave the battery unused for more than 30 minutes before measuring its open-circuit voltage.
12.8 V ~ Charging is complete.
12.0 ~ 12.7 V ~ Recharging is required.
Under 12.0 V ~ Replace the battery.

CAUTION:
Constant amperage chargers are not suitable for charging MF batteries.

NO

This type of battery charger cannot charge an MF battery. A variablevoltage charger is recommended.





6. Install:
   - battery
7. Connect:
   - battery leads
     (to the battery terminals)

CAUTION:

First, connect the positive battery lead ①, and then the negative battery lead ②.

8. Check:
   - battery terminals
     Dirt → Clean with a wire brush.
     Loose connection → Connect properly.

9. Lubricate:
   - battery terminals

	Recommended lubricant **Dielectric grease**

10. Install:
    - battery cover
    - mat
      Refer to “COVER AND PANEL”.

EAS00181

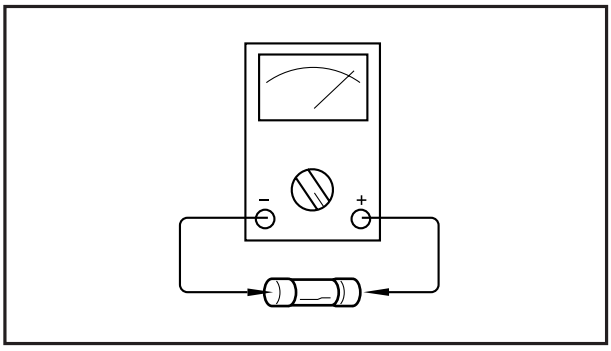
CHECKING THE FUSES

The following procedure applies to all of the fuses.

CAUTION:

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

1. Remove:
   - mat
   - battery cover
     Refer to “COVER AND PANEL”.



2. Check:
   ● fuse

****

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

NOTE:
Set the pocket tester selector to "Ω × 1".

Pocket tester
90890-03132 (YU-03112-C)

b. If the pocket tester indicates "∞", replace the fuse.

****

3. Replace:
   ● blown fuse

****

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

Fuses	Amperage rating	Q'ty
Main	10A	1
Reserve	10A	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.

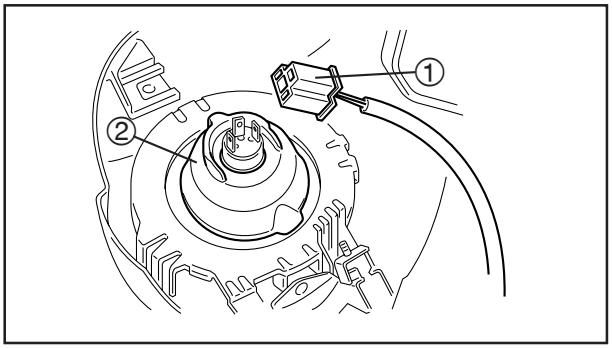
****

4. Install:
   ● battery cover
   ● mat
   Refer to "COVER AND PANEL".

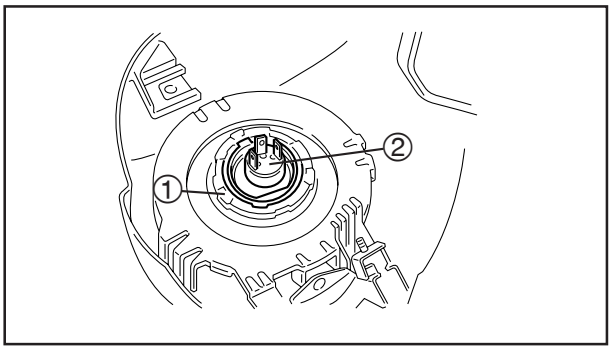
EAS00182

REPLACING THE HEADLIGHT BULB

1. Remove:
   - headlight cover



2. Disconnect:
   - headlight coupler ①
3. Remove:
   - headlight bulb holder rubber②



4. Remove :
   - headlight bulb holder ①
   - 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.

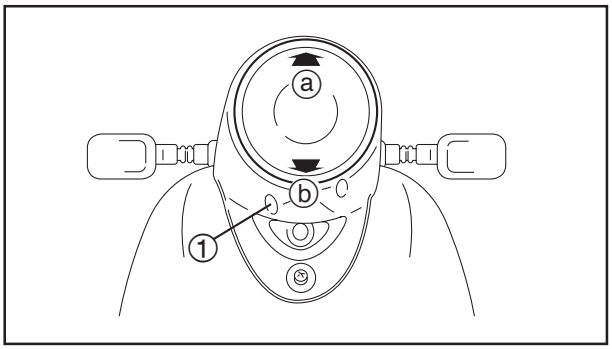
5. Install:
   - headlight bulb **New**

   Secure the new headlight bulb with the headlight bulb holder.

CAUTION:

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.

6. Install :
   - headlight bulb holder
   - headlight bulb holder rubber
7. Connect:
   - headlight coupler
8. Install:
   - headlight cover



EAS00185

ADJUSTING THE HEADLIGHT BEAMS

The following procedure applies to both of the headlight.

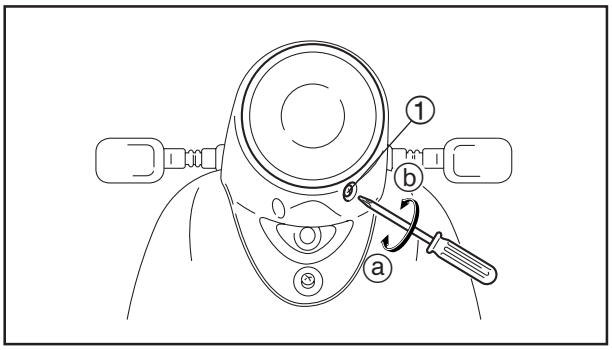
1. Adjust:
   - headlight beam (vertically)

a. Loosen the adjusting screw ①and press headlight in direction ⓐ or ⓑ.

****

Direction ⓐ	Headlight beam is raised.
Direction ⓑ	Headlight beam is lowered.

****



2. Adjust:
   - headlight beam (horizontally)

****

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

Direction ⓐ	Headlight beam moves to the right.
Direction ⓑ	Headlight beam moves to the left.

****

CHAPTER 4
CHASSIS

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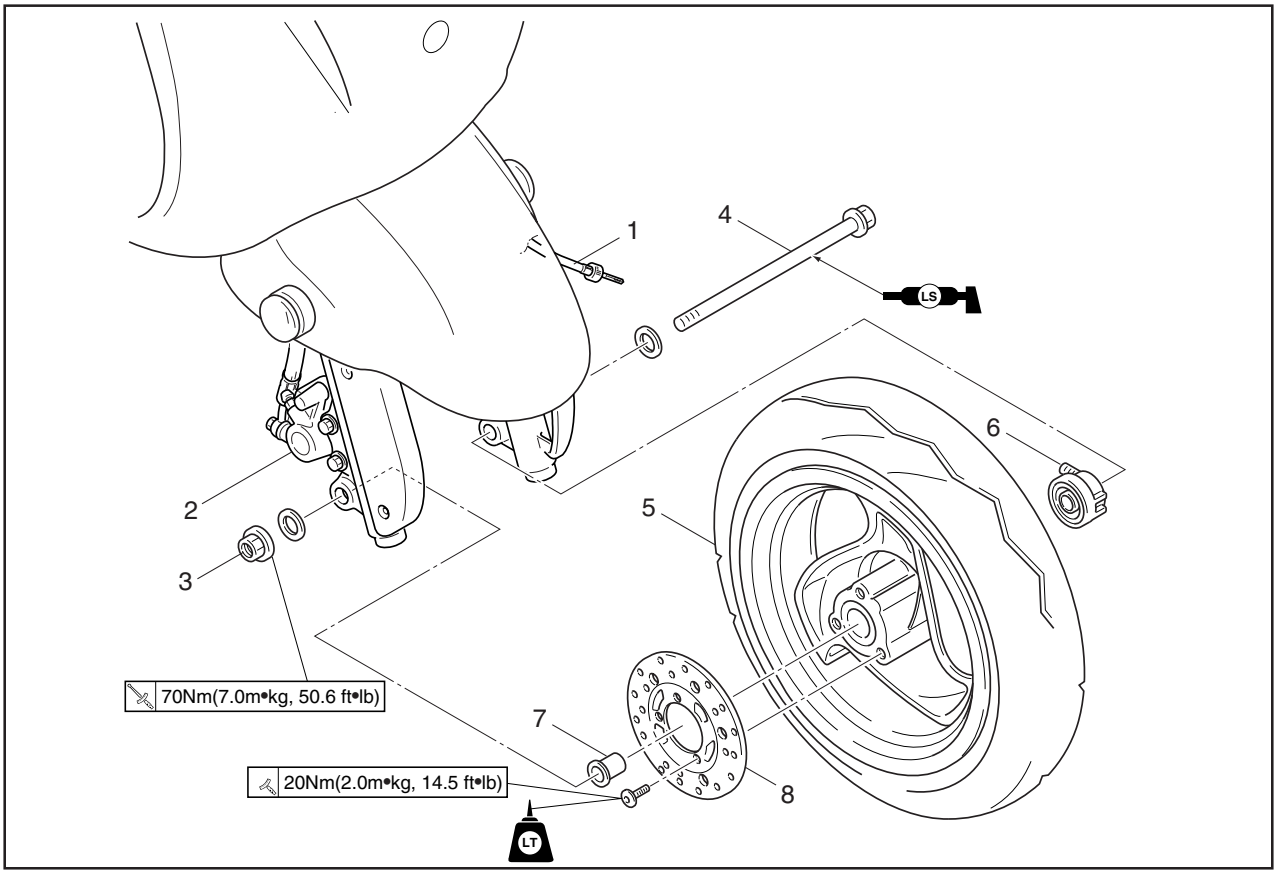
EAS00513

CHASSIS

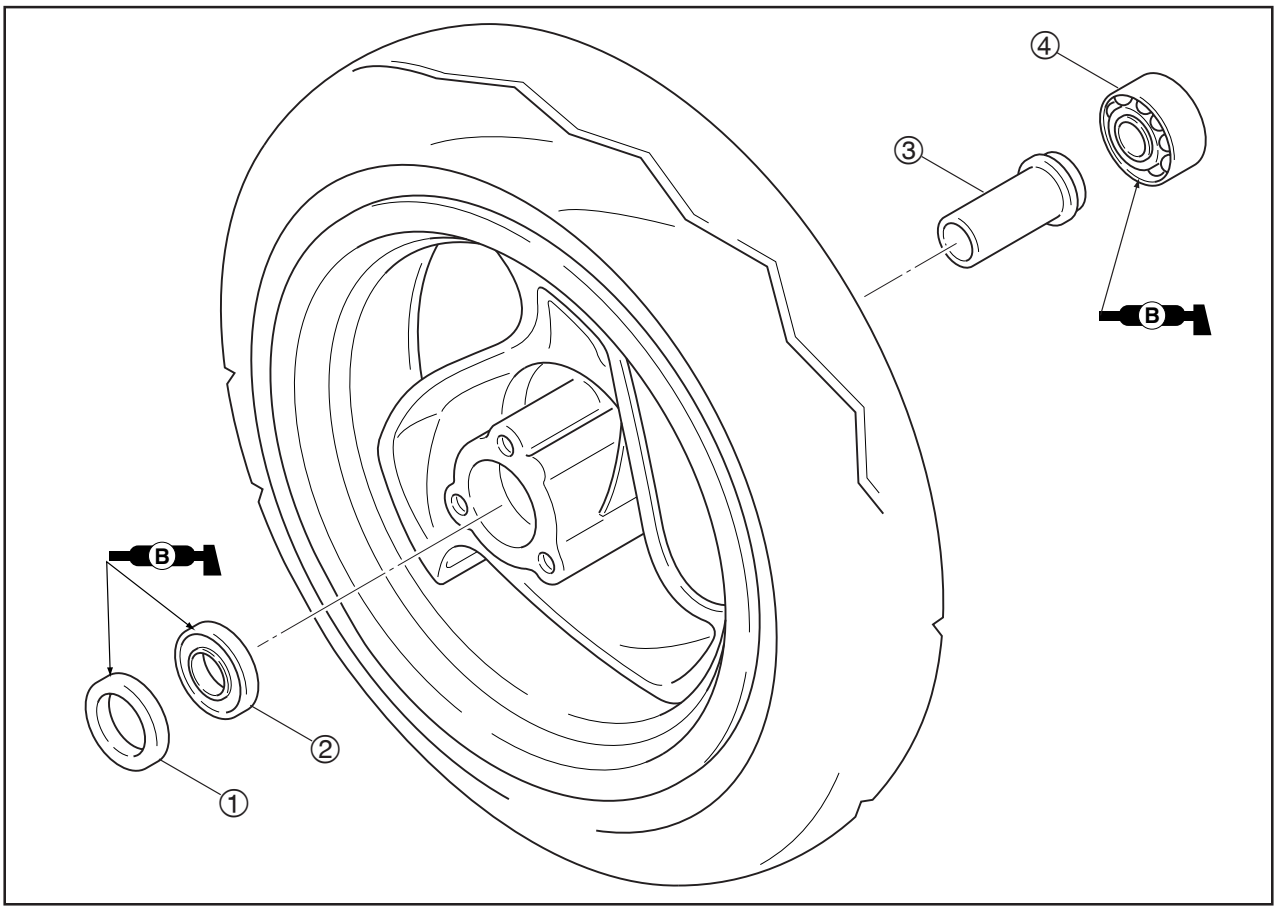
FRONT WHEEL AND BRAKE DISC



Order	Job/Part	Q'ty	Remarks
	Removing the front wheel and brake disc		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	1	
2	Front brake caliper assembly	1	
3	Wheel axle nut	1	
4	Wheel axle	1	
5	Front wheel	1	
6	Speedometer gear unit assembly	1	Refer to"REMOVING THE FRONT WHEEL and INSTALLING THE FRONT WHEEL"
7	Spacer	1	
8	Front brake disc	1	
			For installation, reverse the removal procedure.

EAS00518

FRONT WHEEL



Order	Job/Part	Q'ty	Remarks
	Disassembling the front wheel		Remove the parts in the order listed.
①	Oil seal	1	
②	Bearing	1	
③	Collar	1	
④	Bearing	1	Refer to"REMOVING THE FRONT WHEEL" and "INSTALLING THE FRONT WHEEL" For assembly, reverse the disassembly procedure.

EAS00520

REMOVING THE FRONT WHEEL

1. Stand the scooter on a level surface.

⚠WARNING

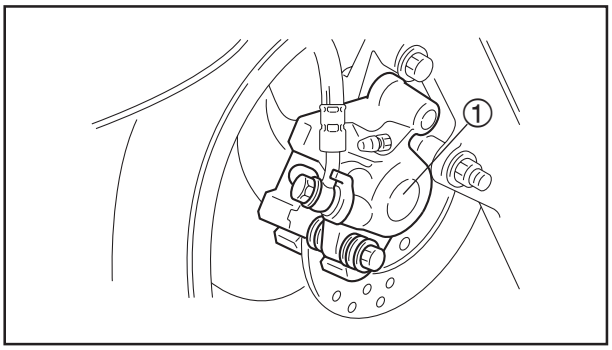
Securely support the scooter so that there is no danger of it falling over.

NOTE:

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

2. Remove:
   - speedometer cable
   - brake hose holder

   Refer to" REMOVING THE FRONT WHEEL AND BRAKE DISC" .



3. Remove:
   - brake caliper①
   - front wheel axle
   - front wheel
   - speedometer gear unit assembly

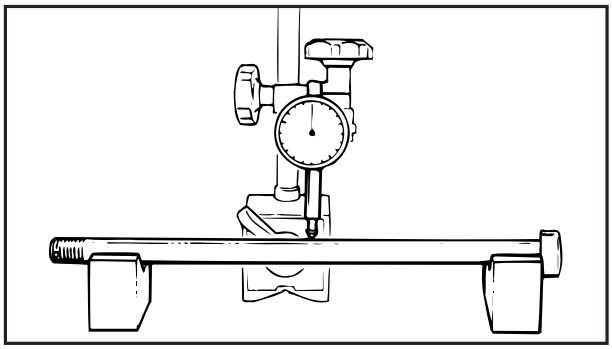
NOTE:

Do not apply the brake lever when removing the brake caliper.

4. Elevate:
   - front wheel

NOTE:

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



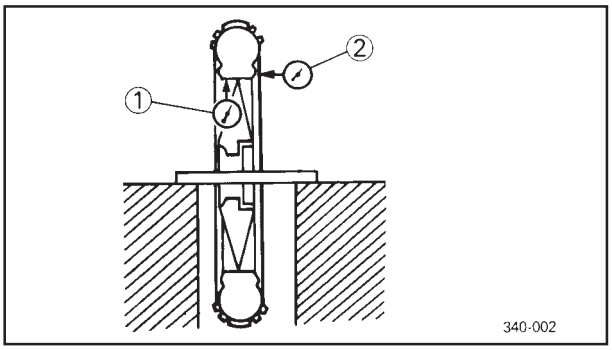
EAS00525
CHECKING THE FRONT WHEEL

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

⚠WARNING

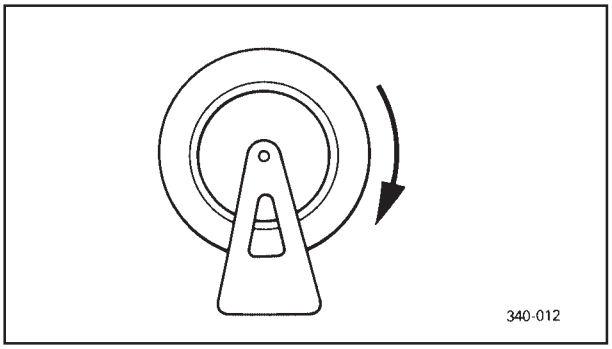
Do not attempt to straighten a bent wheel axle.

2. Check:
   - tire
   - front wheel
     Damage/wear → Replace.
     Refer to "CHECKING THE TIRES" and "CHECKING THE WHEELS" in chapter 3.



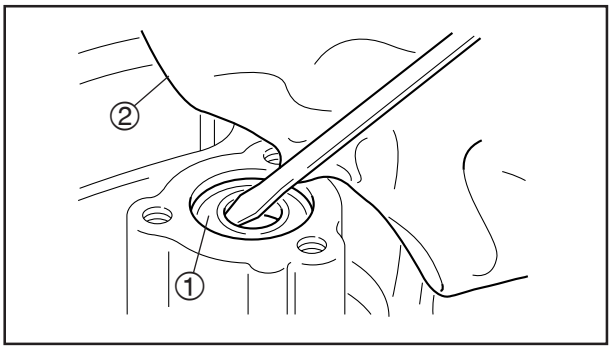
3. Measure:
   - radial wheel runout ①
   - lateral wheel runout ②
     Over the specified limits → Replace.

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



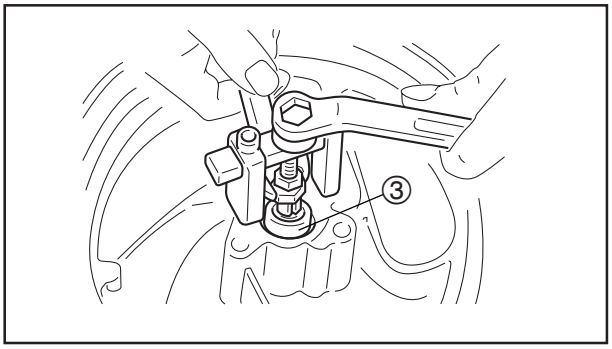
4. Check:
   - wheel bearings
     Front wheel turns roughly or is loose → Replace the wheel bearings.
   - oil seals
     Damage/wear → Replace.
5. Replace:
   - wheel bearings **New**
   - oil seal **New**

****



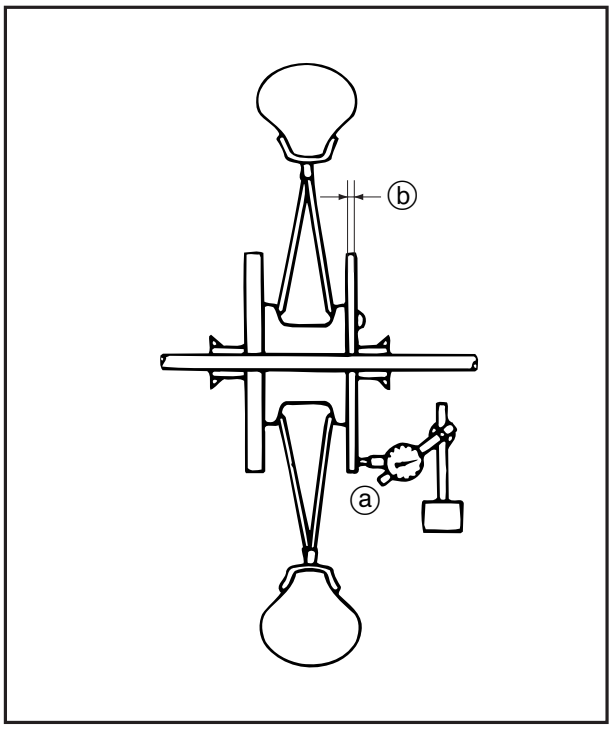
a. Clean the outside of the front wheel hub.
b. Remove the oil seals ① with a flat-head screwdriver.

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



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

****



EAS00528
CHECKING THE BRAKE DISC

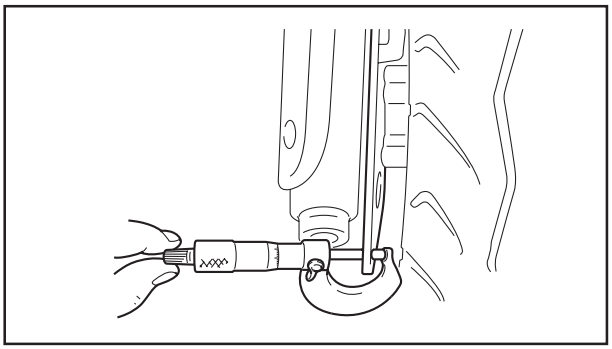
1. Check:
   - brake disc
     Damage/galling → Replace.
2. Measure:
   - brake disc deflection ⓐ
     Out of specification → Correct the brake disc deflection or replace the brake disc.

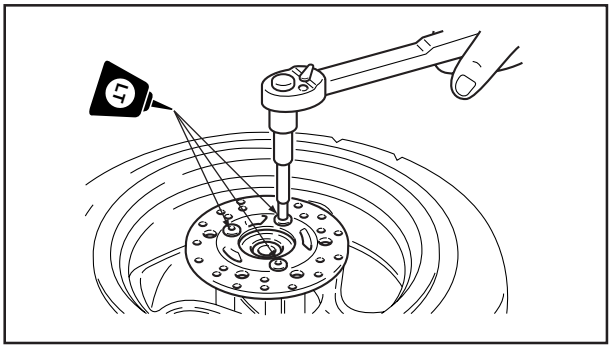
Brake disc deflection limit (maximum)
0.10 mm (0.04 in)

****

a. Place the scooter on a suitable stand so that the front wheel is elevated.
b. Before measuring the front brake disc deflection, turn the handlebar to the left or right to ensure that the front wheel is stationary.
c. Remove the brake caliper.
d. Hold the dial gauge at a right angle against the brake disc surface.
e. Measure the deflection 2 ~ 3 mm (0.08 ~ 0.12 in) below the edge of the brake disc.

****





3. Measure:
   - brake disc thickness ⓑ
     Measure the brake disc thickness at a few different locations.
     Out of specification → Replace.

Brake disc thickness limit (minimum)
3.5 mm (0.14 in)

4. Adjust:
   - brake disc deflection

****

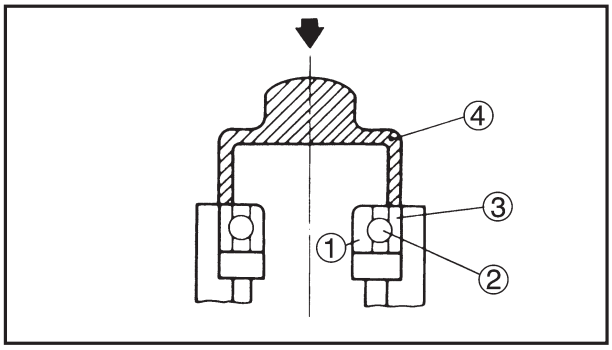
a. Remove the brake disc.
b. Rotate the brake disc by one bolt hole.
c. Install the brake disc.

NOTE:
Tighten the brake disc bolts in stages and in a crisscross pattern.

Brake disc bolt
20 Nm (2.0 m • kg, 14.5 ft • lb)
LOCTITE®

d. Measure the brake disc deflection.
e. If out of specification, repeat the adjustment steps until the brake disc deflection is within specification.
f. If the brake disc deflection cannot be brought within specification, replace the brake disc.

****



EAS00539

ASSEMBLING THE FRONT WHEEL

1. Install:
   - wheel bearings
   - oil seals **New**

****

a. Install the new wheel bearings and oil seals in the reverse order of disassembly.

CAUTION:

Do not contact the wheel bearing inner race ① or balls ②. Contact should be made only with the outer race ③.

NOTE:

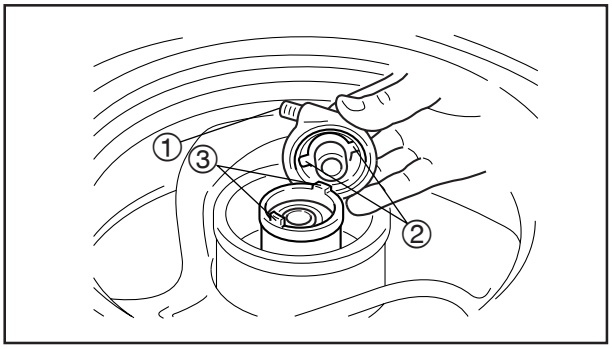
Use a socket ④ that matches the diameter of the wheel bearing outer race and oil seal.

****

EAS00542
INSTALLING THE FRONT WHEEL

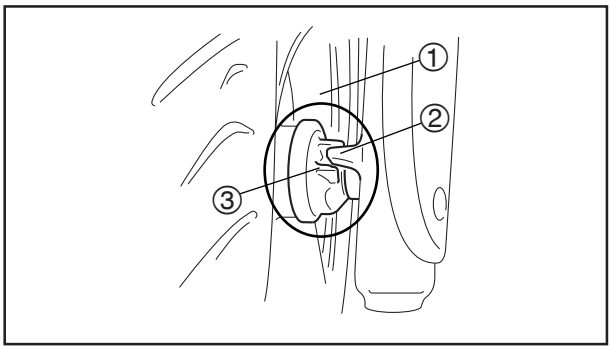
1. Lubricate:
   - wheel axle
   - wheel bearings
   - oil seal lips

	Recommended lubricant **Lithium-soap-based grease**



2. Install:
   - speedometer gear unit ①

NOTE:
Make sure the speedometer gear unit and the wheel hub are installed with the two projections ②meshed into the two slots③ respectively.



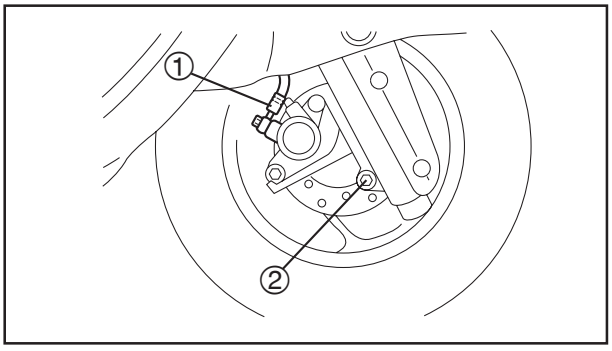
3. Install:
   - front wheel ①

NOTE:
Make sure the slot② in the speedometer gear unit fits over the stopper ③on the outer tube.

4. Tighten:
   - wheel axle

	70 Nm (7.0 m • kg, 50.6 ft • lb)

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



5. Install:
   - brake caliper ①
   - brake caliper bolts ②

	35 Nm (3.5 m • kg, 25.3 ft • lb)

⚠WARNING
Make sure the brake hose is routed properly.

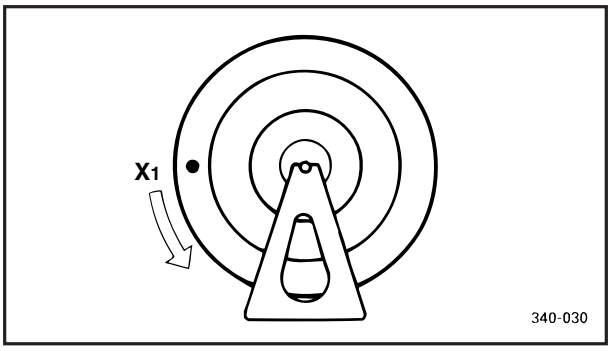
EAS00548

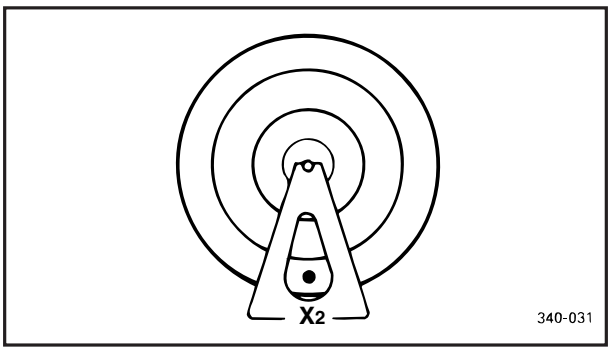
ADJUSTING THE FRONT WHEEL STATIC BALANCE

NOTE:

- After replacing the tire, wheel or both, the front wheel static balance should be adjusted.
- Adjust the front wheel static balance with the brake disc installed.

1. Remove:
   - balancing weight(s)





2. Find:
   - front wheel's heavy spot

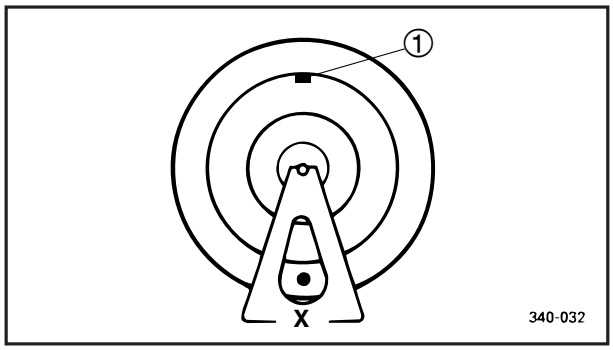
NOTE:

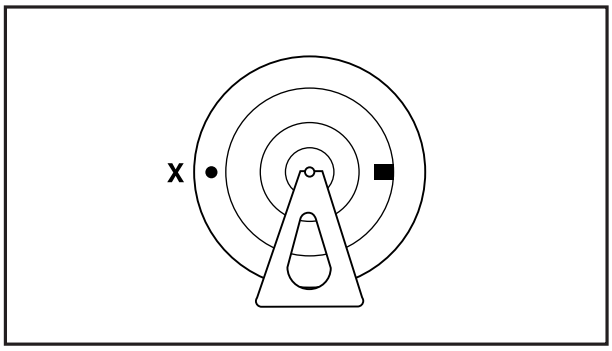
Place the front wheel on a suitable balancing stand.

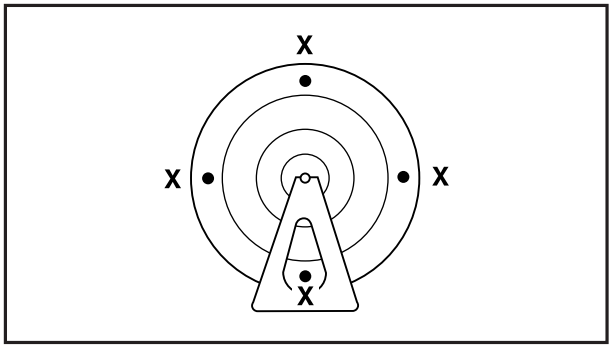
****

a. Spin the front wheel.
b. When the front wheel stops, put an "X1" mark at the bottom of the wheel.
c. Turn the front wheel 90° so that the "X1" mark is positioned as shown.
d. Release the front wheel.
e. When the wheel stops, put an "X2" mark at the bottom of the wheel.
f. Repeat steps (d) through (f) several times until all the marks come to rest at the same spot.
g. The spot where all the marks come to rest is the front wheel's heavy spot "X".

****







3. Adjust:
   - front wheel static balance

****

a. Install a balancing weight ① onto the rim exactly opposite the heavy spot "X".

NOTE:
Start with the lightest weight.

b. Turn the front wheel 90° so that the heavy spot is positioned as shown.
c. If the heavy spot does not stay in that position, install a heavier weight.
d. Repeat steps (b) and (c) until the front wheel is balanced.

****

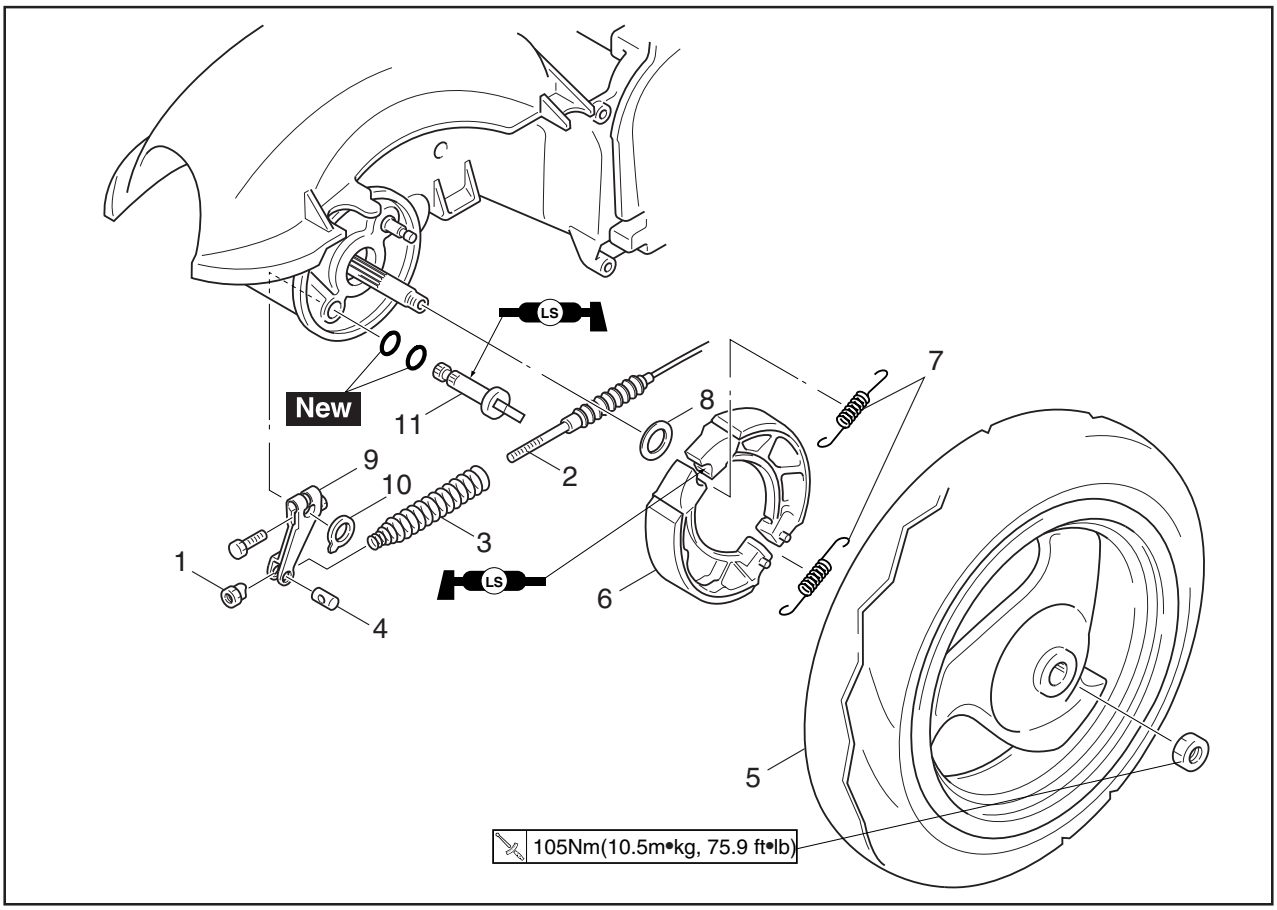
4. Check:
   - front wheel static balance

****

a. Turn the front wheel and make sure it stays at each position shown.
b. If the front wheel does not remain stationary at all of the positions, rebalance it.

****

REAR WHEEL AND REAR BRAKE



Order	Job/Part	Q'ty	Remarks
	Removing the rear wheel and rear brake		Remove the parts in the order listed. **NOTE:** Place the scooter on a suitable stand so that the front wheel is elevated.
	Muffler assembly		Refer to "MAINFOLD, AIR FILTER AND MUFFLER ASSEMBLY "in chapter 5.
	Rear arm		
1	Brake adjuster	1	
2	Brake cable	1	
3	Compression spring	1	
4	Pin	1	
5	Rear wheel	1	
6	Brake shoe	2	
7	Tension spring	2	
8	Plate washer	1	
9	Camshaft lever	1	
10	Indicator plate	1	
11	Brake camshaft	1	
			For installation, reverse the removal procedure.

EAS00565

CHECKING THE REAR WHEEL

1. Check:
   - wheel axle
   - rear wheel

   Refer to “CHECKING THE FRONT WHEEL”.
2. Check:
   - tire
   - rear wheel

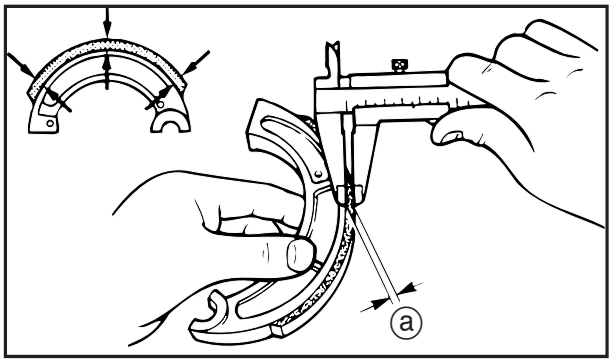
   Damage/wear → Replace.
   Refer to “CHECKING THE TIRES” and “CHECKING THE WHEELS” in chapter 3.
3. Measure:
   - radial wheel runout
   - lateral wheel runout

   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.

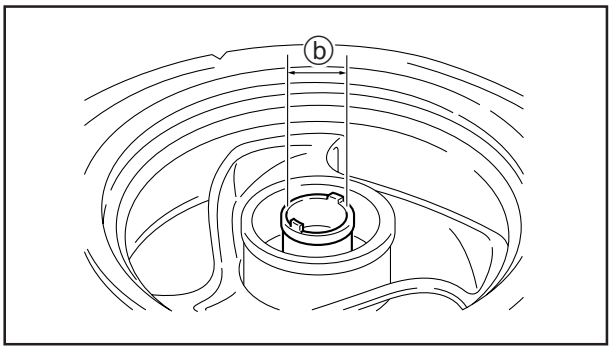


2. Measure:
   - brake shoe lining thickness ⓐ
     Out of specification → Replace.

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

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

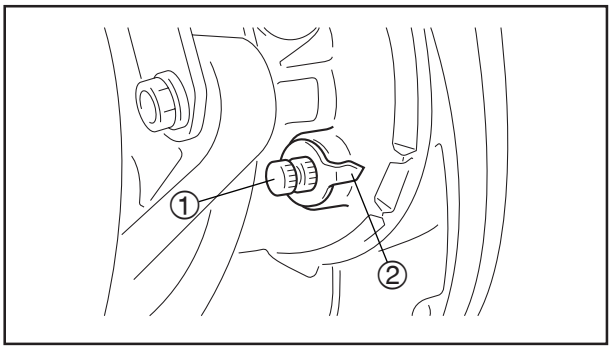
NOTE:
Replace the brake shoes as a set, if either is worn to the wear limit.



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

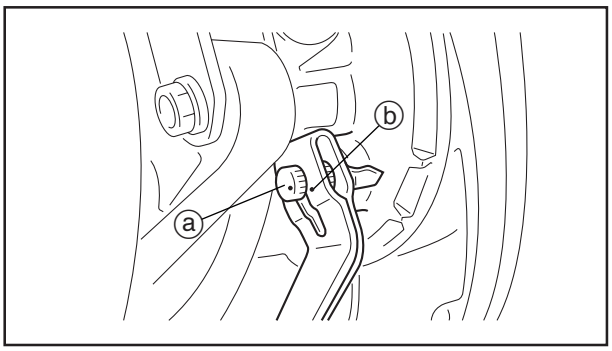
Brake drum inside diameter limit (maximum)
111 mm(4.37 in)

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
ASSEMBLING THE BRAKE SHOE PLATE

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



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

2. Check:
   - rear brake level free play
     Refer to "CHECKING AND ADJUSTING THE REAR BRAKE " in chapter 3.

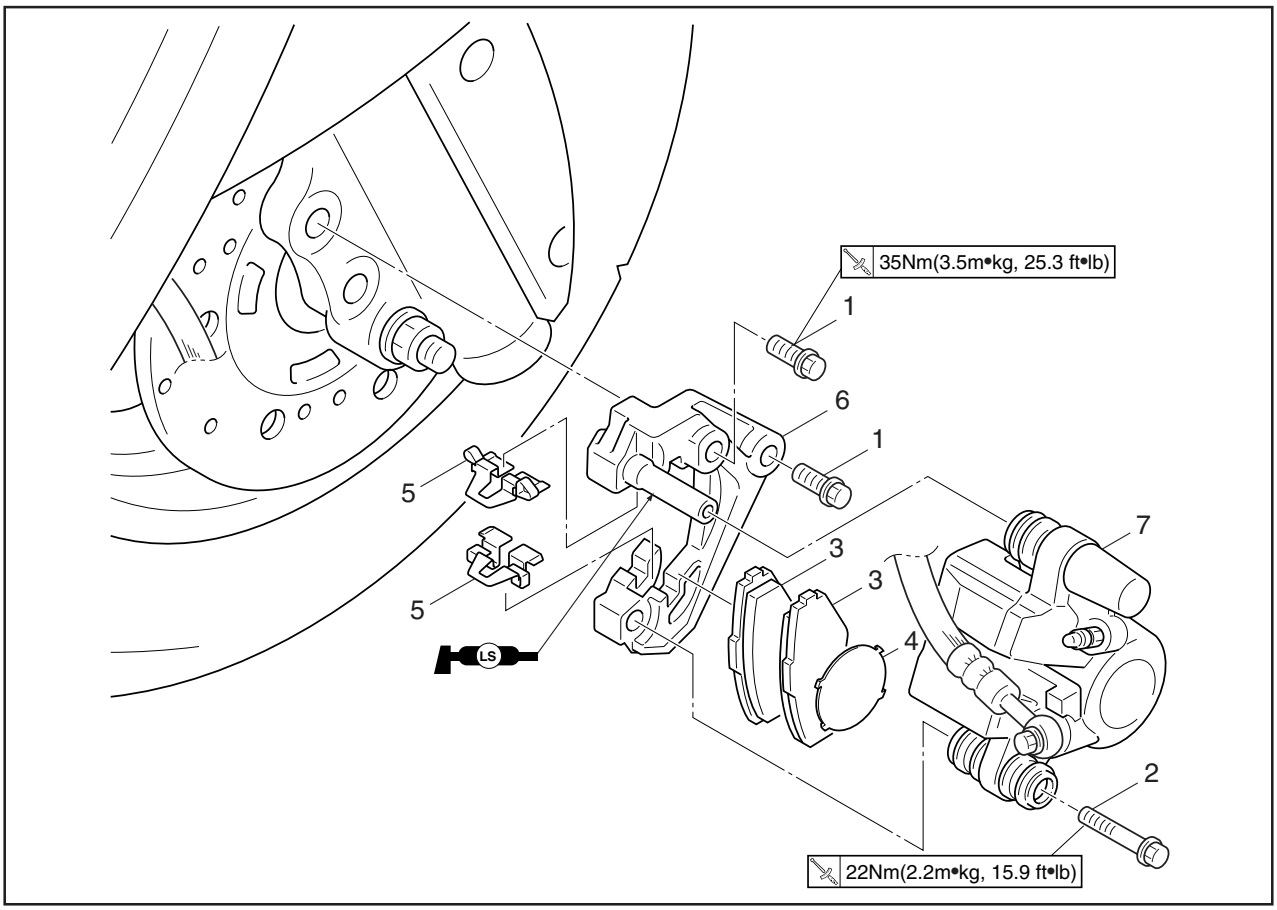
EAS00575
ADJUSTING THE REAR WHEEL STATIC BALANCE
NOTE:
- After replacing the tire, wheel or both, the rear wheel static balance should be adjusted.
- Adjust the rear wheel static balance with the brake disc and rear wheel drive hub installed.

1. Adjust:
   - rear wheel static balance
     Refer to "ADJUSTING THE FRONT WHEEL STATIC BALANCE".

EAS00576

FRONT BRAKE

FRONT BRAKE PADS



Order	Job/Part	Q'ty	Remarks
	Removing the front brake pads		Remove the parts in the order listed.
1	Caliper brake bracket bolt	2	
2	Caliper brake pad bolt	1	
3	Brake pad	2	
4	Brake pad plate	1	
5	Brake pad spring	2	Refer to "REPLACING THE FRONT BRAKE PADS".
6	Caliper brake bracket	1	
7	Caliper assembly	1	
			For installation, reverse the removal procedure.

EAS00579

CAUTION:

Disc brake components rarely require disassembly.
Therefore, always follow these preventive measures:

- **Never disassemble brake components unless absolutely necessary.**
- **If any connection on the hydraulic brake system is disconnected, the entire brake system must be disassembled, drained, cleaned, properly filled, and bled after reassembly.**
- **Never use solvents on internal brake components.**
- **Use only clean or new brake fluid for cleaning brake components.**
- **Brake fluid may damage painted surfaces and plastic parts. Therefore, always clean up any spilt brake fluid immediately.**
- **Avoid brake fluid coming into contact with the eyes as it can cause serious injury.**

FIRST AID FOR BRAKE FLUID ENTERING THE EYES:

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

EAS00581

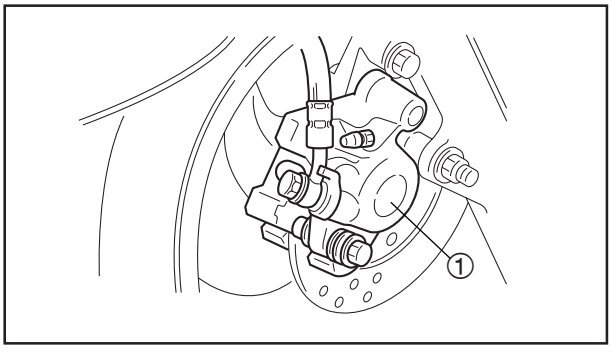
REPLACING THE FRONT BRAKE PADS

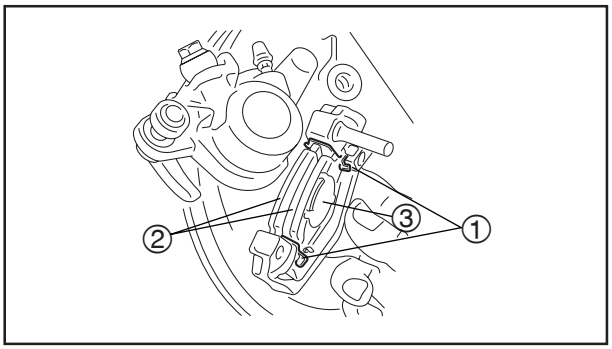
NOTE:

When replacing the brake pads, it is not necessary to disconnect the brake hose or disassemble the brake caliper.

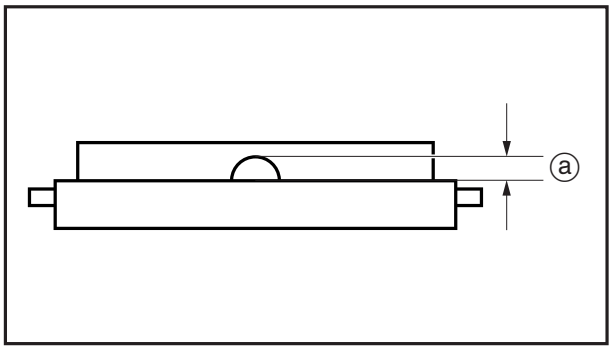
1. Loosen:
   - brake pad bolt

2. Remove:
   - brake caliper ①



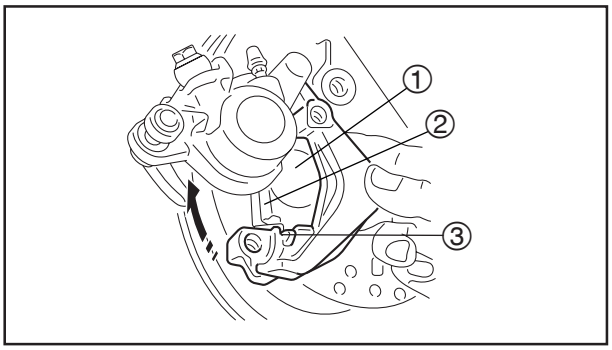


3. Remove:
   - brake pad bolt
   - brake pad spring ①
   - brake pads ②
   - brake pad plate ③



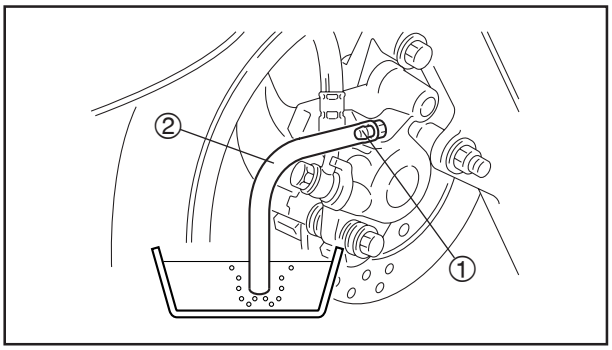
4. Measure:
   - brake pad wear limit ⓐ
     Out of specification → Replace the brake pads as a set.

Brake pad wear limit
0.8 mm(0.03 in)



5. Install:
   - brake pad plate ①
   - brake pads ②
   - brake pad spring ③

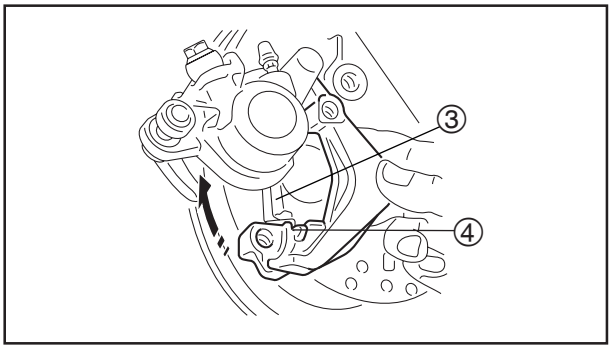
NOTE:
Always install new brake pads and a new brake pad spring as a set.



****

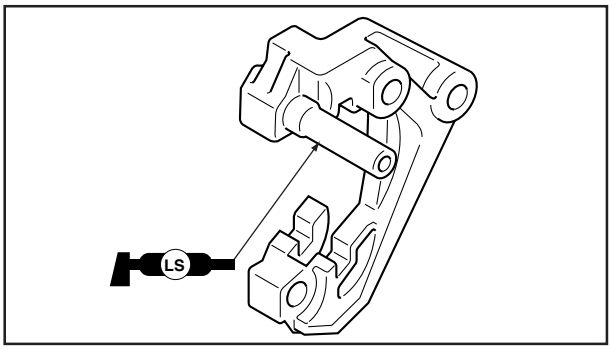
a. Connect a clear plastic hose ② tightly to the bleed screw ①. Put the other end of the hose into an open container.
b. Loosen the bleed screw and push the brake caliper pistons into the brake caliper with your finger.
c. Tighten the bleed screw.

Bleed screw
6 Nm (0.6 m • kg, 4.3 ft • lb)



d. Install new brake pads③ and new brake pad springs④.

NOTE:
- Make sure the brake pad spring is installed correctly as shown.



6. Lubricate:
   - brake caliper guide bar

	Recommended lubricant **Lithium-soap-based grease**

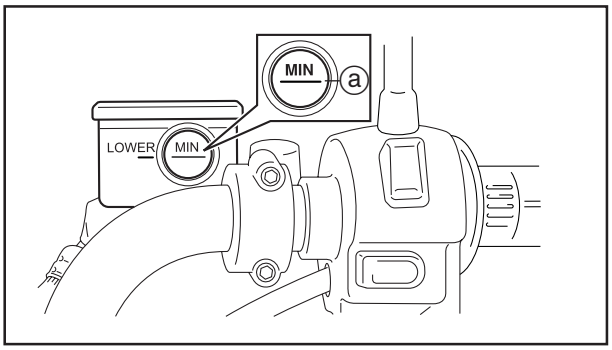
CAUTION:
- **Do not allow grease to contact the brake pads.**
- **Remove any excess grease.**

7. Install:
   - brake pad bolt

	22 Nm (2.2 m • kg, 15.9 ft • lb)

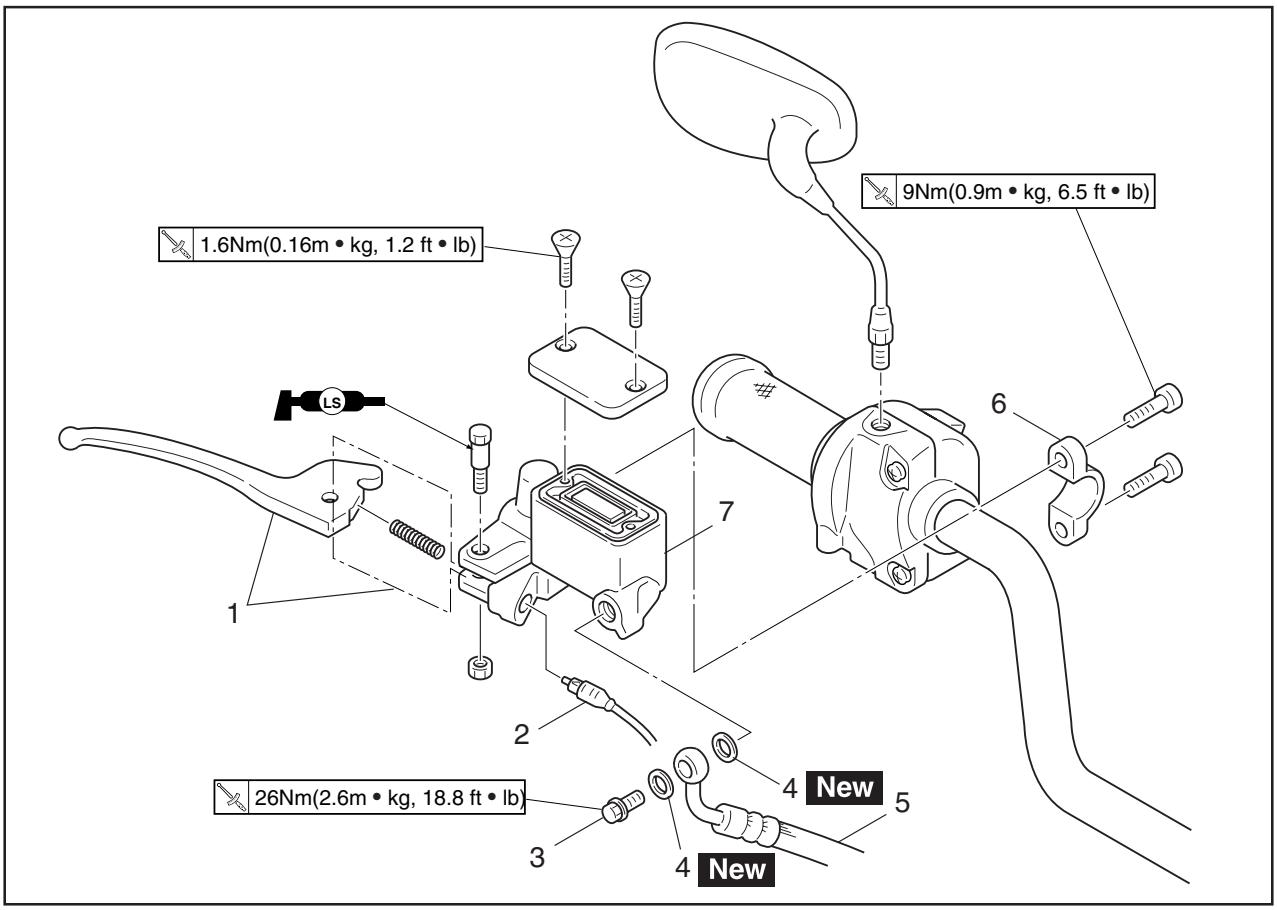
   - brake caliper bolt

	35 Nm (3.5 m • kg, 23.5 ft • lb)



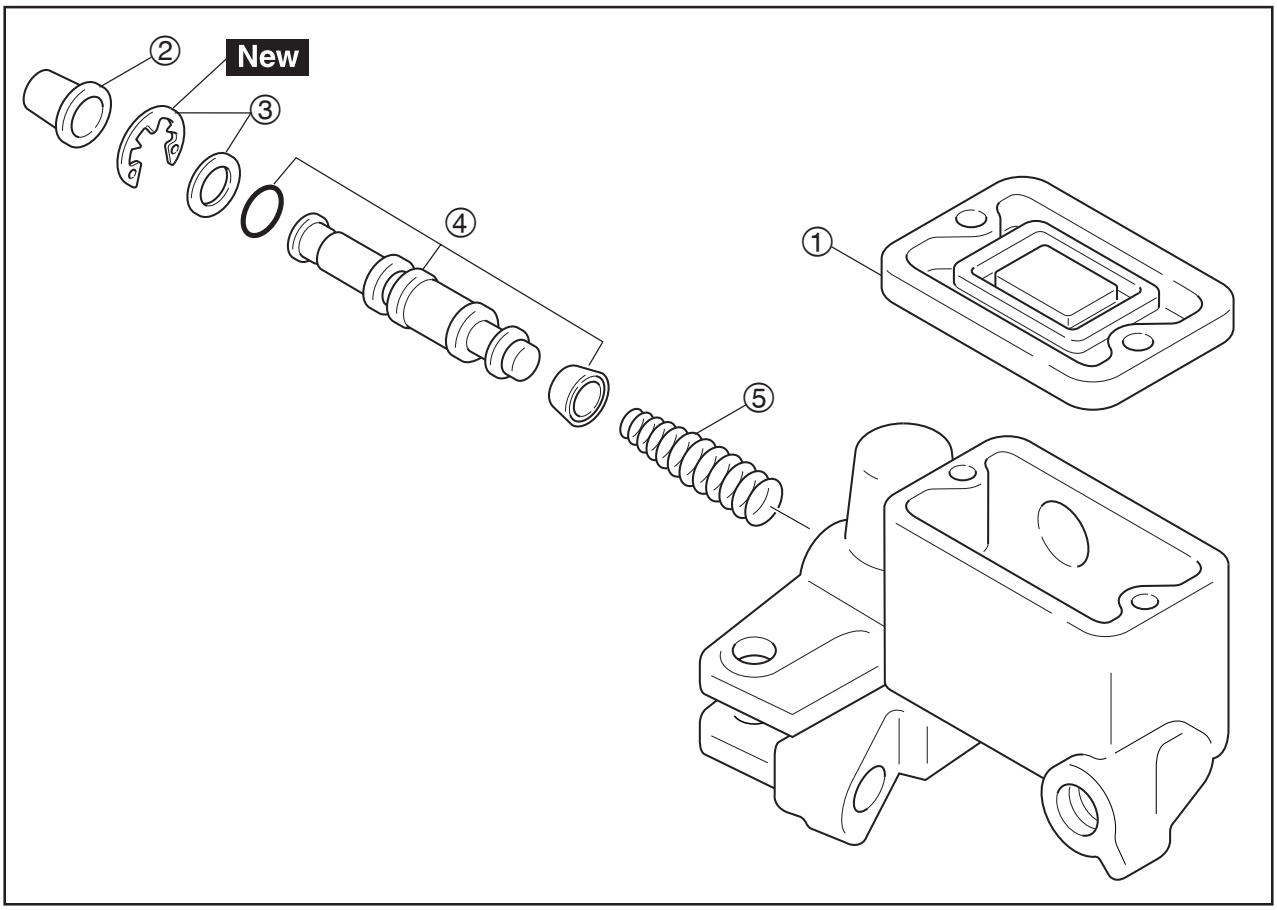
8. Check:
   - brake fluid level
     Below the MIN level mark ⓐ → Add the recommended brake fluid to the proper level.
     Refer to "CHECKING THE BRAKE FLUID LEVEL" in chapter 3.
9. Check:
   - brake lever operation
     Soft or spongy feeling → Bleed the brake system.
     ` Refer to "BLEEDING THE HYDRAULIC BRAKE SYSTEM" in chapter 3.

EAS00584
FRONT BRAKE MASTER CYLINDER



Order	Job/Part	Q'ty	Remarks
	Removing the front brake master cylinder		Remove the parts in the order listed.
	Brake fluid		Drain.
1	Brake lever / Compress spring	1/1	
2	Front brake light switch	1	
3	Union bolt	1	
4	Copper washer	2	
5	Brake hose	1	
6	Master cylinder bracket	1	
7	Master cylinder assembly	1	
			For installation, reverse the removal procedure.

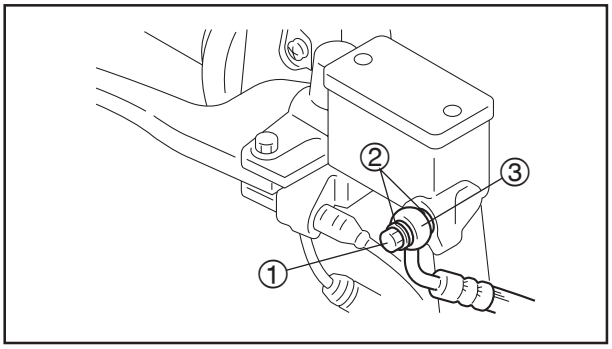
EAS00585
DISASSEMBING THE FRONT BRAKE MASTER CYLINDER



Order	Job/Part	Q'ty	Remarks
	Disassembling the front brake master cylinder		Remove the parts in the order listed.
①	Reservoir diaphragm	1	
②	Dust boot	1	
③	Circlip / Washer	1/1	
④	Master cylinder kit	1	
⑤	Spring	1	
			For assembly, reverse the disassembly procedure.

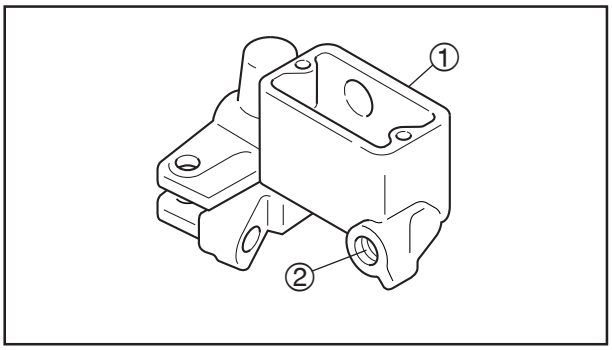
EAS00588
DISASSEMBLING THE FRONT BRAKE MASTER CYLINDER

NOTE:
Before disassembling the front brake master cylinder, drain the brake fluid from the entire brake system.



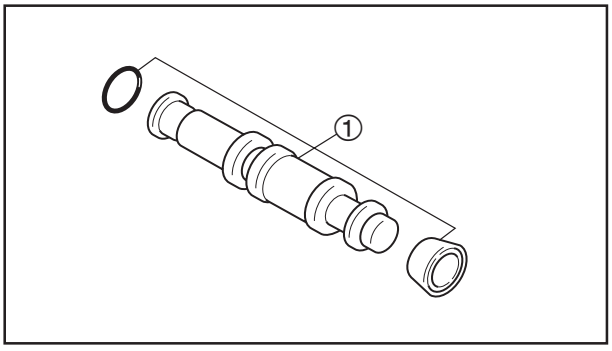
1. Disconnect:
   - brake switch coupler (from the brake switch)
2. Remove:
   - union bolt ①
   - copper washer ②
   - brake hose ③

NOTE:
To collect any remaining brake fluid, place a container under the master cylinder and the end of the brake hose.

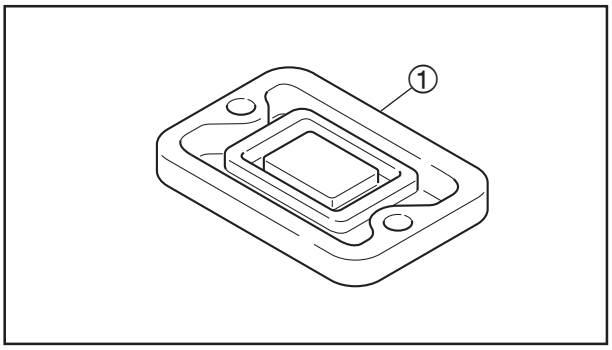


EAS00590
CHECKING THE FRONT BRAKE MASTER CYLINDER

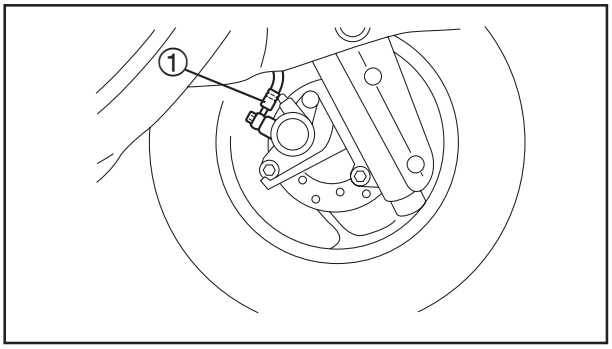
1. Check:
   - brake master cylinder ①
   - Damage/scratches/wear → Replace.
   - brake fluid delivery passages ② (brake master cylinder body) Obstruction → Blow out with compressed air.



2. Check:
   - brake master cylinder kit ① Damage/scratches/wear → Replace.



3. Check:
   - brake master cylinder reservoir
     Cracks/damage → Replace.
     brake master cylinder reservoir diaphragm ①
     Damage/wear → Replace.



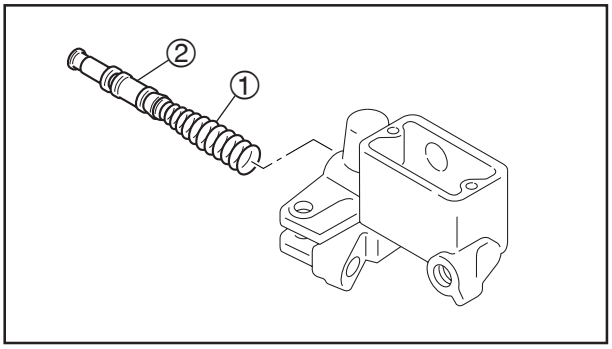
4. Check:
   brake hoses ①
   Cracks/damage/wear → Replace.

EAS00597

ASSEMBLING AND INSTALLING THE FRONT BRAKE MASTER CYLINDER

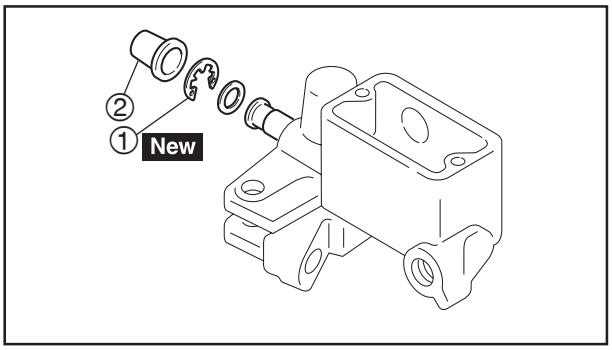
⚠WARNING

- **Before installation, all internal brake components should be cleaned and lubricated with clean or new brake fluid.**
- **Never use solvents on internal brake components.**

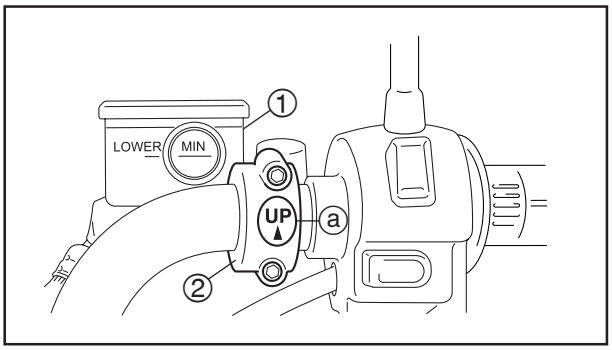


Recommended brake fluid
DOT 4

1. Install:
   - spring ①
     Install the spring with its smaller diameter to the master cylinder kit.
   - master cylinder kit ②



2. Install:
   - circlip① **New**
   - dust boot②
3. Install:
   - brake switch
   - brake lever

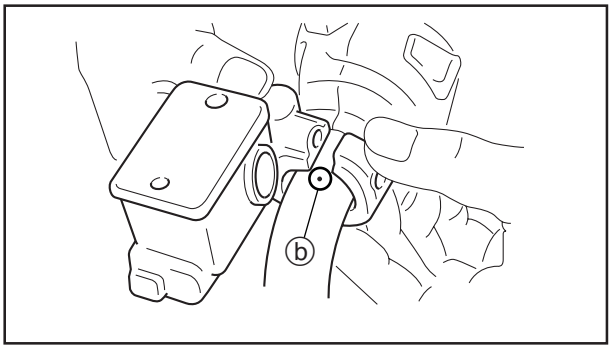


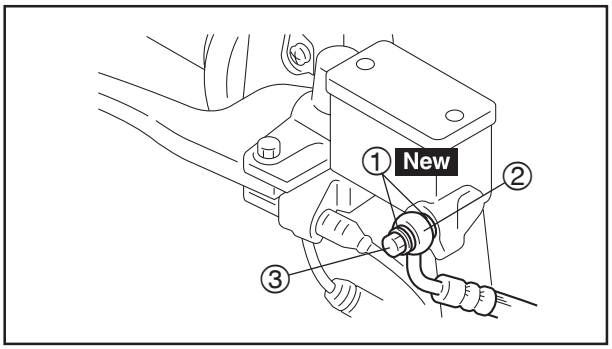
4. Install:
   - master cylinder①
   - master cylinder bracket②

9 Nm (0.9 m • kg, 6.5 ft • lb)

CAUTION:

- **Install the brake master cylinder holder with the "UP" mark ⓐ facing up.**
- **Align the end of the brake master cylinder holder with the punch mark ⓑ on the handlebar.**
- **First, tighten the upper bolt, then the lower bolt.**





5. Install:
   - copper washers① New
   - brake hose②
   - union bolt③

	26 Nm (2.6 m • kg, 18.8 ft • lb)

⚠WARNING

Proper brake hose routing is essential to insure safe scooter operation. Refer to "CABLE ROUTING".

NOTE:

- While holding the brake hose, tighten the union bolt as shown.
- Turn the handlebar to the left and right to make sure the brake hose does not touch other parts (e.g., wire harness, cables, leads). Correct if necessary.

6. Fill:
   - brake master cylinder reservoir (with the specified amount of the recommended brake fluid)

	Recommended brake fluid DOT 4

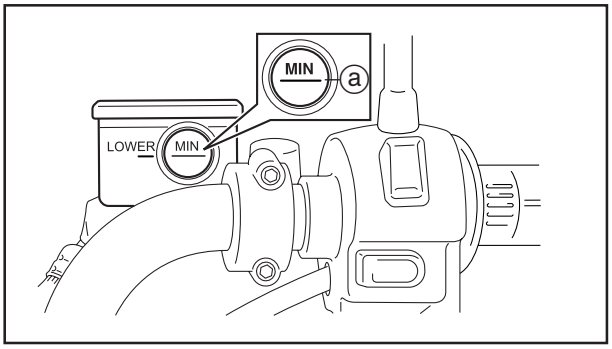
⚠WARNING

- **Use only the designated brake fluid. Other brake fluids may cause the rubber seals to deteriorate, causing leakage and poor brake performance.**
- **Refill with the same type of brake fluid that is already in the system. Mixing brake fluids may result in a harmful chemical reaction, leading to poor brake performance.**
- **When refilling, be careful that water does not enter the brake fluid reservoir. Water will significantly lower the boiling point of the brake fluid and could cause vapor lock.**

CAUTION:

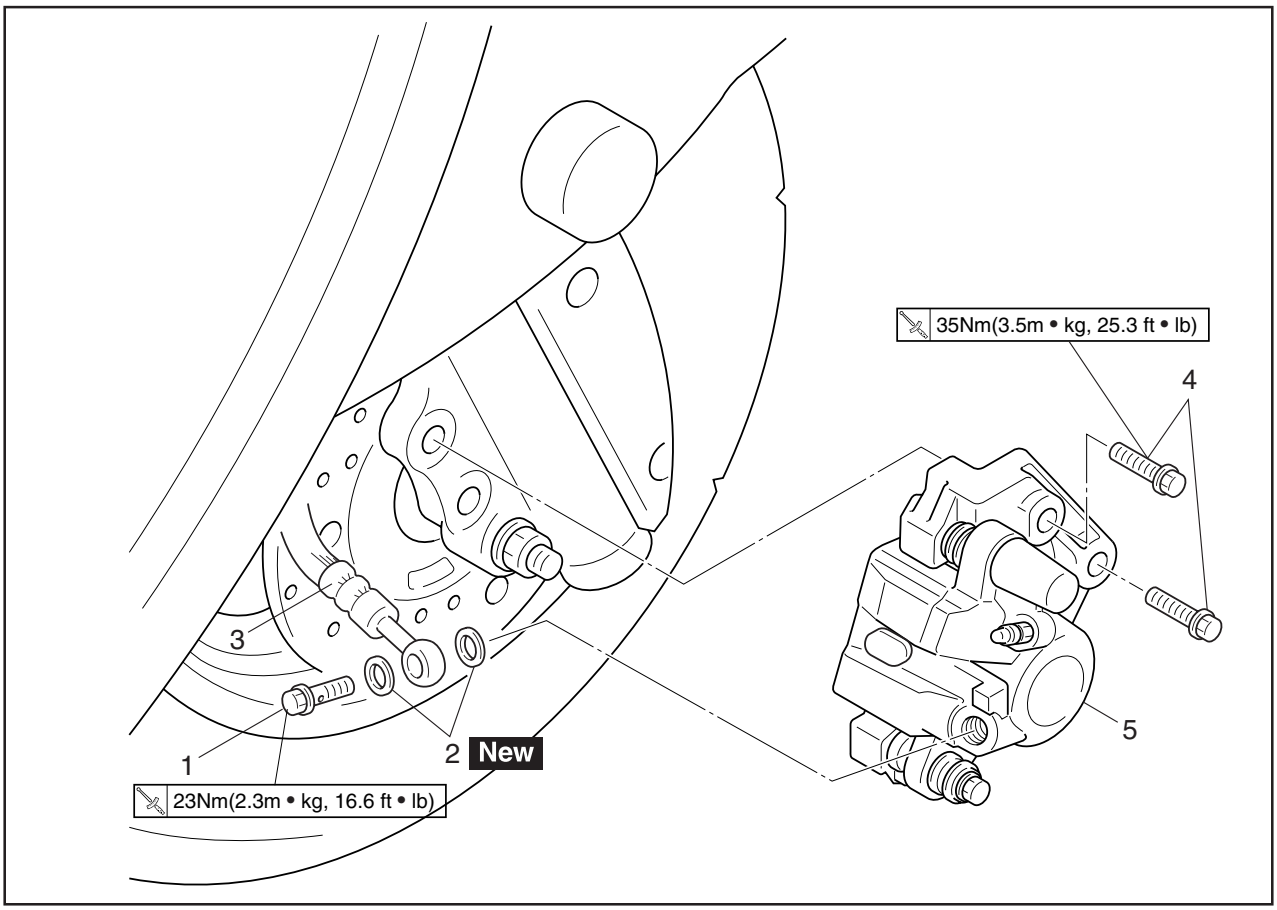
Brake fluid may damage painted surfaces and plastic parts. Therefore, always clean up any spilt brake fluid immediately.

7. Bleed:
   - brake system
     Refer to “BLEEDING THE HYDRAULIC BRAKE SYSTEM” in chapter 3.



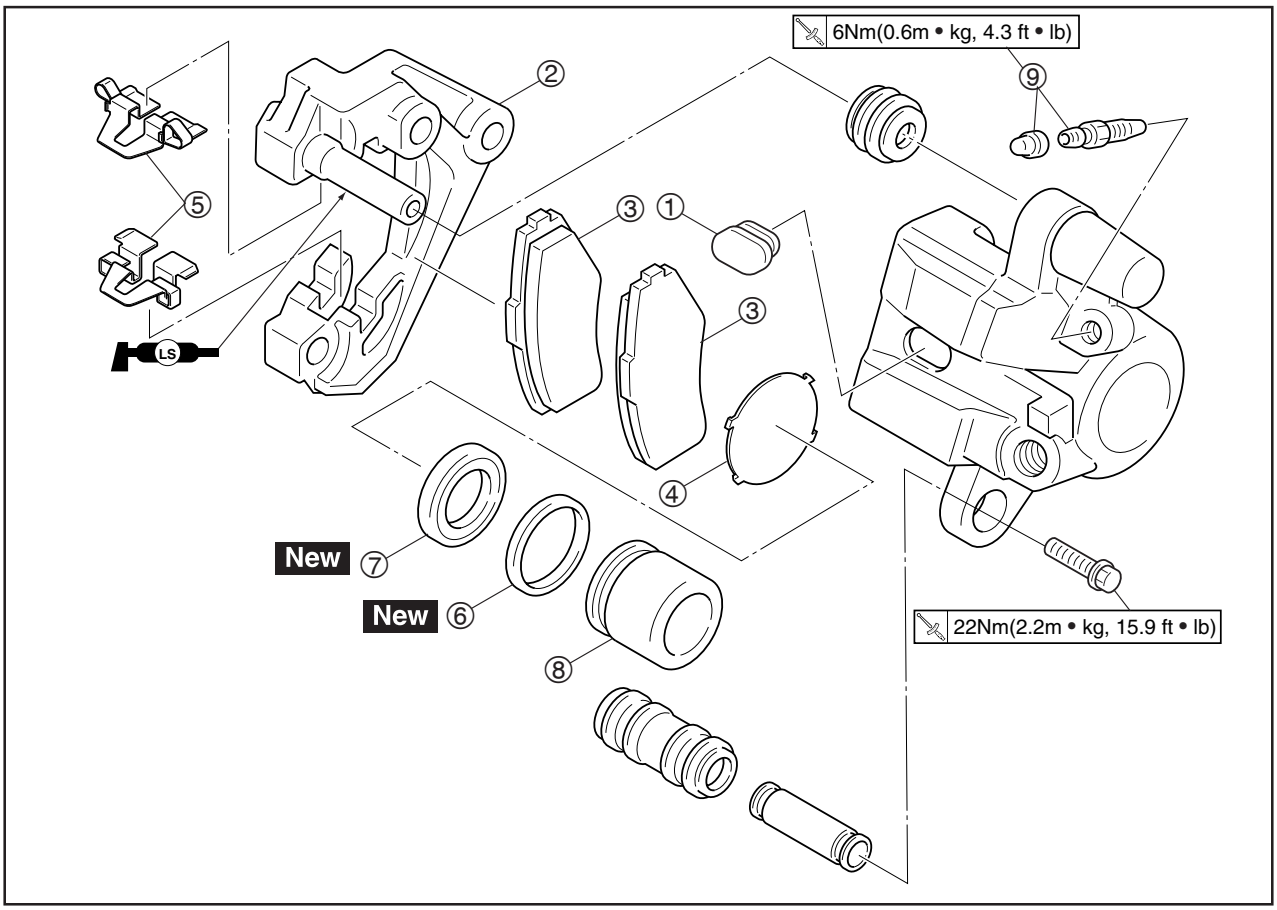
8. Check:
   - brake fluid level
     Below the MIN level mark ⓐ → Add the recommended brake fluid to the proper level.
     Refer to “CHECKING THE BRAKE FLUID LEVEL” in chapter 3.
9. Check:
   - brake lever operation
     Soft or spongy feeling → Bleed the brake system.
     Refer to “BLEEDING THE HYDRAULIC BRAKE SYSTEM” in chapter 3.

EAS00612
FRONT BRAKE CALIPER



Order	Job/Part	Q'ty	Remarks
	Removing the front brake caliper		Remove the parts in the order listed.
	Brake fluid		Drain.
1	Union bolt	1	
2	Copper washer	2	
3	Brake hose	1	
4	Front brake caliper bracket bolt	2	
5	Front brake caliper assembly	1	
			For installation, reverse the removal procedure.

EAS00614
DISASSEMBING THE FRONT BRAKE CALIPER



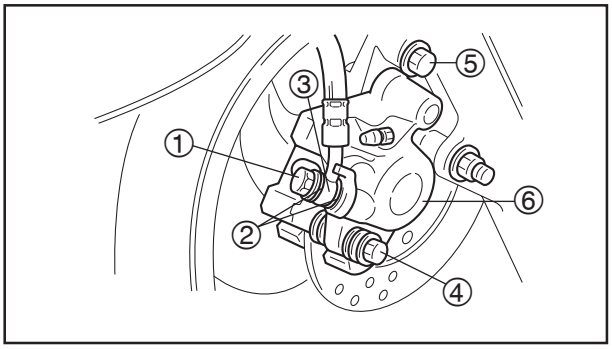
Order	Job/Part	Q'ty	Remarks
	Disassembling the front brake caliper		Remove the parts in the order listed.
①	Cap	1	
②	Caliper bracket	1	
③	Brake pad	2	
④	Brake pad plate	1	
⑤	Brake spring	2	
⑥	Dust seal	1	
⑦	Piston seal	1	
⑧	Caliper piston	1	
⑨	Bleed screw / Cap	1/1	
			For assembly, reverse the disassembly procedure.

EAS00619

DISASSEMBLING THE FRONT BRAKE CALIPER

NOTE:

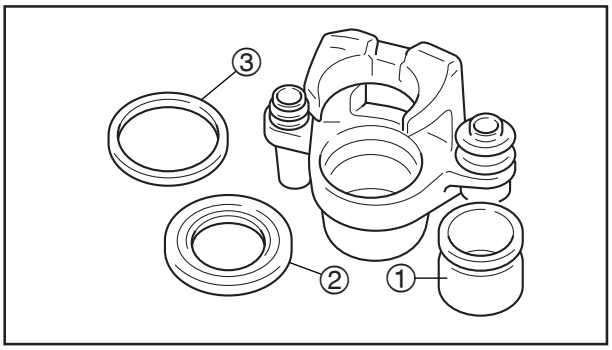
Before disassembling the brake caliper, drain the brake fluid from the entire brake system.



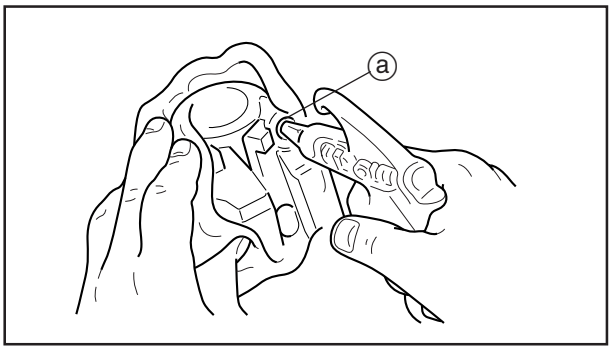
1. Remove:
   - union bolt ①
   - copper washers ②
   - brake hose ③
   - brake caliper pad bolt ④
   - brake caliper bracket bolts ⑤
   - brake caliper assembly ⑥

NOTE:

Put the end of the brake hose into a container and pump out the brake fluid carefully.



2. Remove:
   - brake caliper piston ①
   - brake caliper piston seal ②
   - brake caliper dust seal ③



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a. Blow compressed air into the brake hose joint opening ⓐ to force out the pistons from the brake caliper.

⚠WARNING

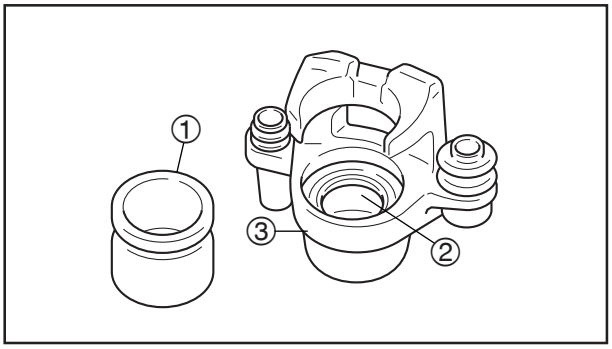
- **Cover the brake caliper pistons with a rag. Be careful not to get injured when the piston are expelled from the brake caliper.**
- **Never try to pry out the brake caliper piston.**

b. Remove the brake caliper piston seal.

****

EAS00631
CHECKING THE FRONT BRAKE CALIPER

Recommended brake component replacement schedule	
Brake pads	If necessary
Piston seal	Every 2 years
Brake fluid	Every 2 year and whenever the brake is disassembled



1. Check:
   - brake caliper piston ①
     Rust/scratches/wear → Replace the brake caliper piston assembly.
   - brake caliper cylinder ②
     Scratches/wear → Replace the brake caliper assembly.
   - brake caliper body ③
     Cracks/damage → Replace the brake caliper assembly.
   - brake fluid delivery passages (brake caliper body)
     Obstruction → Blow out with compressed air.

⚠WARNING

Whenever a brake caliper is disassembled, replace the piston seal.

2. Check:
   - brake caliper bracket
     Cracks/damage → Replace.

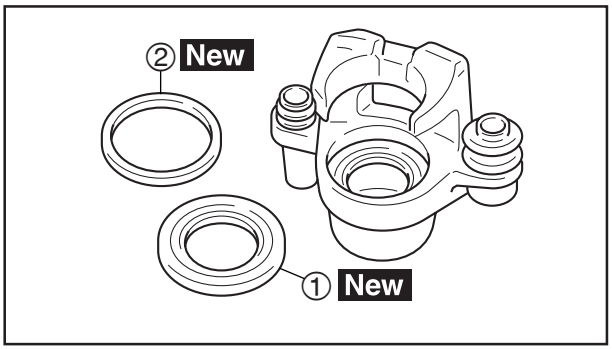
EAS00637

ASSEMBLING AND INSTALLING THE FRONT BRAKE CALIPER

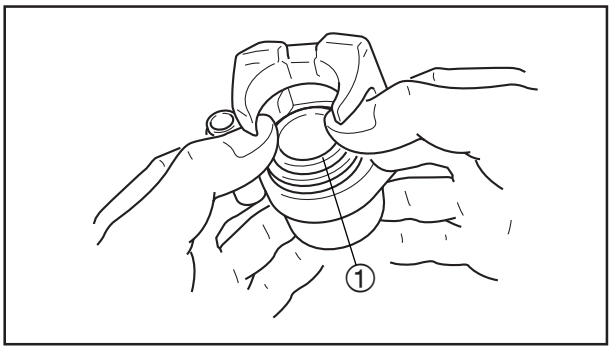
⚠WARNING

- **Before installation, all internal brake components should be cleaned and lubricated with clean or new brake fluid.**
- **Never use solvents on internal brake components as they will cause the piston seals to swell and distort.**
- **Whenever a brake caliper is disassembled, replace the brake caliper piston seals.**

Recommended brake fluid
DOT 4



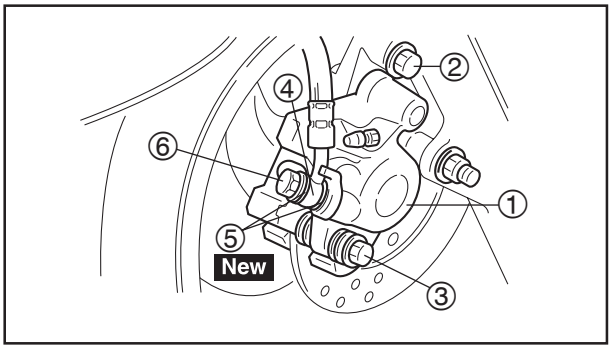
1. Install:
   - brake caliper piston seal ① New
   - brake caliper dust seal ② New



2. Install:
   - brake caliper piston①

CAUTION:

- **Do not force.**
- **Use care to prevent damage on caliper piston.**



3. Install:
   - brake pads
   - brake springs
   - brake caliper assembly①
   - brake caliper bracket bolt②

35 Nm (3.5 m • kg, 25.3 ft • lb)

- brake caliper pad bolt ③

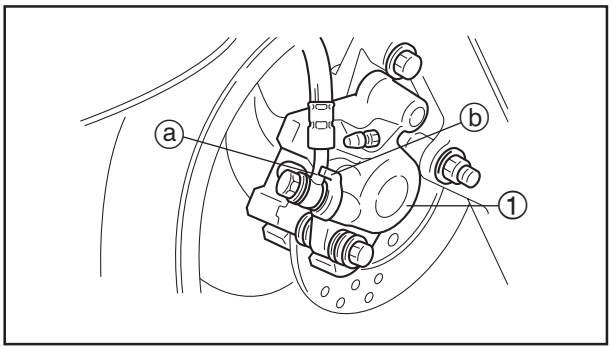
	22 Nm (2.2 m • kg, 15.9 ft • lb)

- brake hose ④
- copper washers ⑤ **New**
- union bolt ⑥

	23 Nm (2.3 m • kg, 16.6 ft • lb)

⚠WARNING

Proper brake hose routing is essential to insure safe scooter operation. Refer to "CABLE ROUTING".



CAUTION:

When installing the brake hose onto the brake caliper ①, make sure the brake pipe ⓐ touches the projection ⓑ on the brake caliper.

4. Fill:
   - brake fluid reservoir
     (with the specified amount of the recommended brake fluid)

	Recommended brake fluid **DOT 4**

⚠WARNING

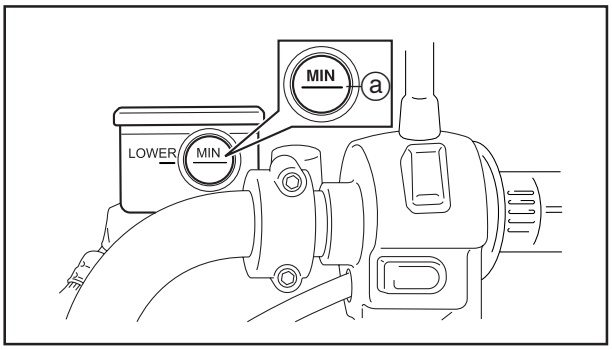
- **Use only the designated brake fluid. Other brake fluids may cause the rubber seals to deteriorate, causing leakage and poor brake performance.**
- **Refill with the same type of brake fluid that is already in the system. Mixing brake fluids may result in a harmful chemical reaction, leading to poor brake performance.**
- **When refilling, be careful that water does not enter the brake fluid reservoir. Wa-**

ter will significantly lower the boiling point of the brake fluid and could cause vapor lock.

CAUTION:

Brake fluid may damage painted surfaces and plastic parts. Therefore, always clean up any spilt brake fluid immediately.

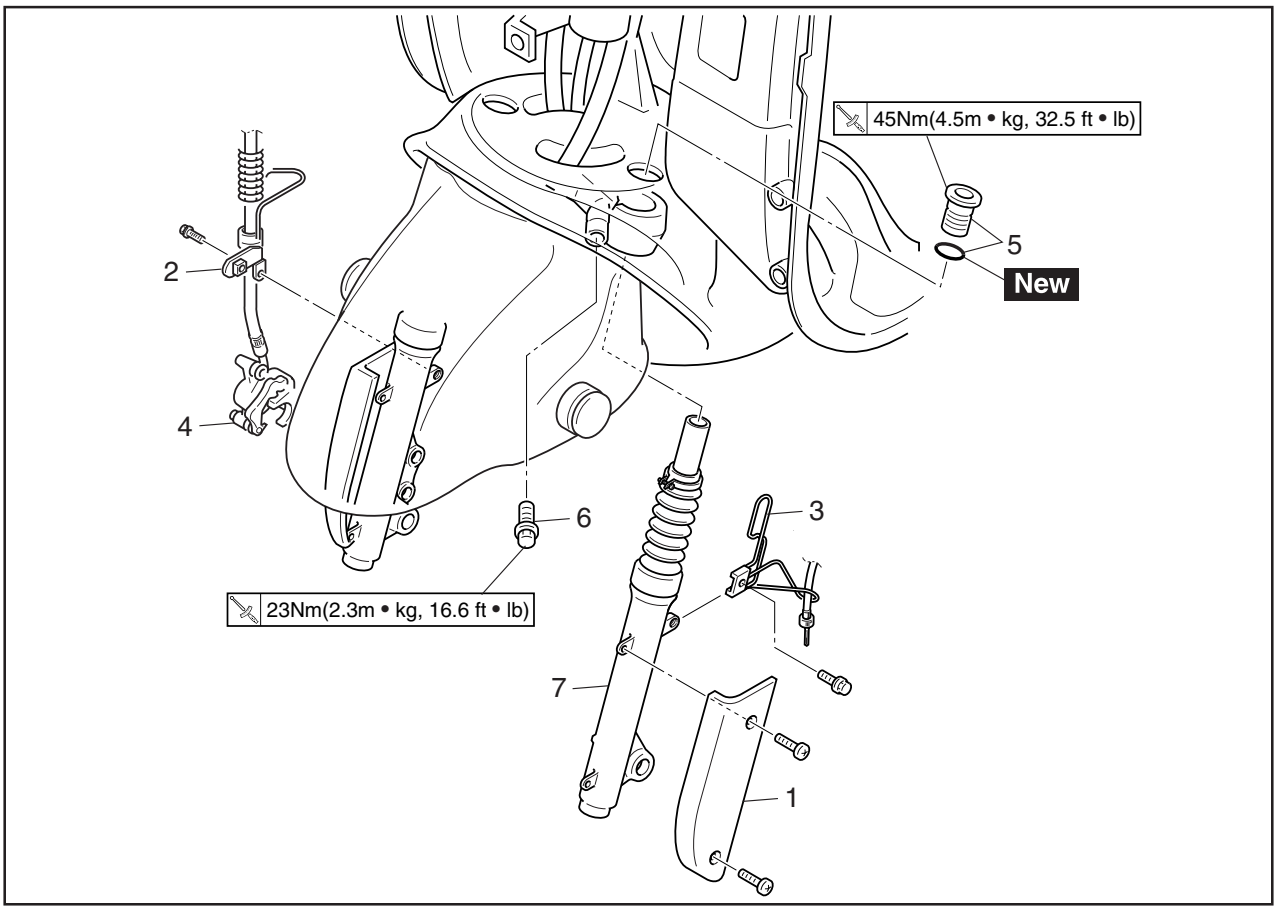
5. Bleed:
   - brake system
     Refer to "BLEEDING THE HYDRAULIC BRAKE SYSTEM" in chapter 3.



6. Check:
   - brake fluid level
     Below the MIN level mark ⓐ → Add the recommended brake fluid to the proper level.
     Refer to "CHECKING THE BRAKE FLUID LEVEL" in chapter 3.

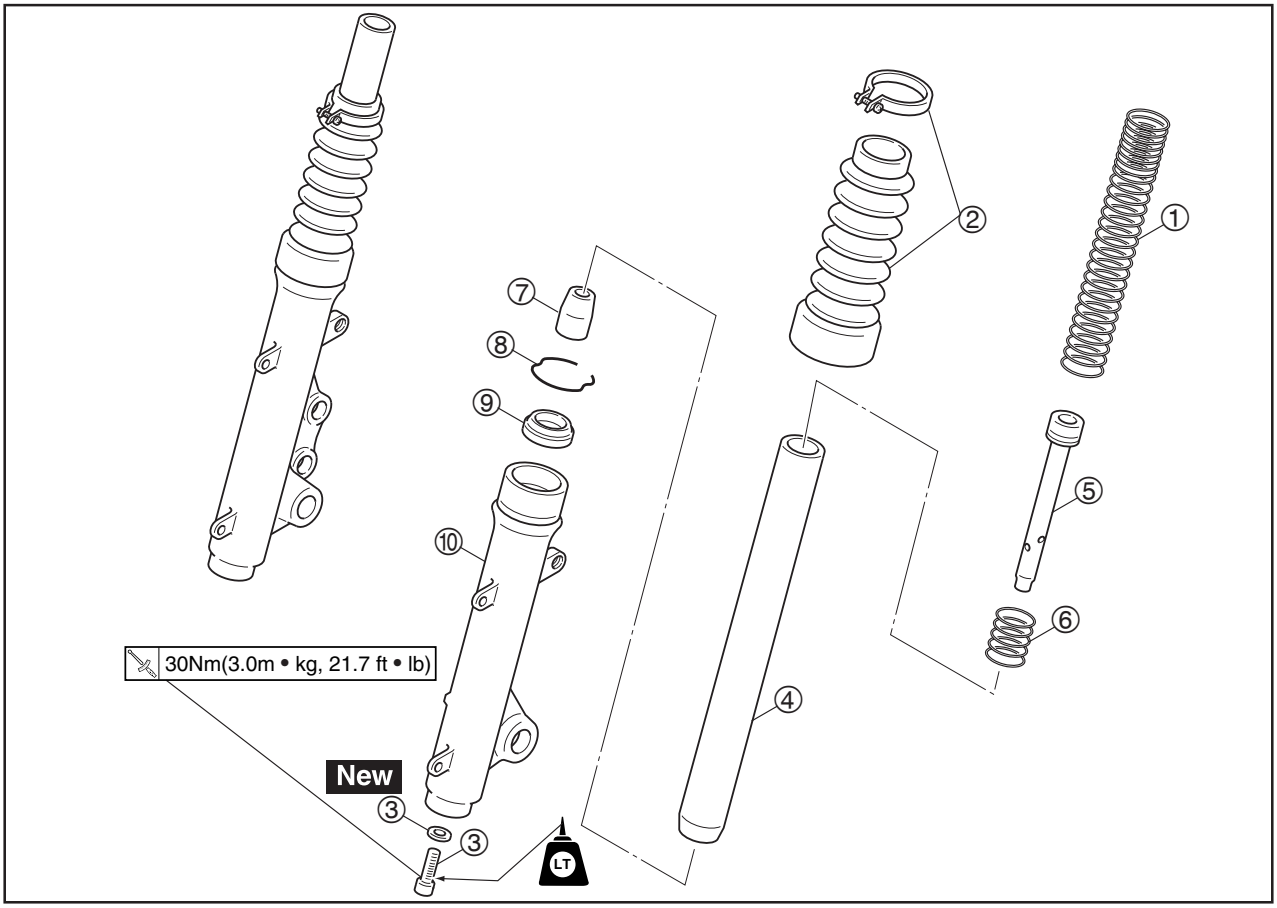
7. Check:
   - brake lever operation
     Soft or spongy feeling → Bleed the brake system.
     Refer to "BLEEDING THE HYDRAULIC BRAKE SYSTEM" in chapter 3.

EAS00646
FRONT FORK



Order	Job/Part	Q'ty	Remarks
	Removing the front fork legs		Remove the parts in the order listed.
	Front wheel		Refer to "FRONT WHEEL AND BRAKE DISC".
	Leg shield 1		Refer to "COVER AND PANEL" in chapter 3.
1	Front fork protect cover	1	
2	Brake hose holder 1	1	
3	Speedometer cable guide	1	
4	Front brake caliper assembly	1	
5	Cap bolt/O-ring	1	
6	Pinch bolt	1	
7	Front fork leg	1	
			For installation, reverse the removal procedure.

EAS00648
DISASSEMBING THE FRONT FORK LEGS



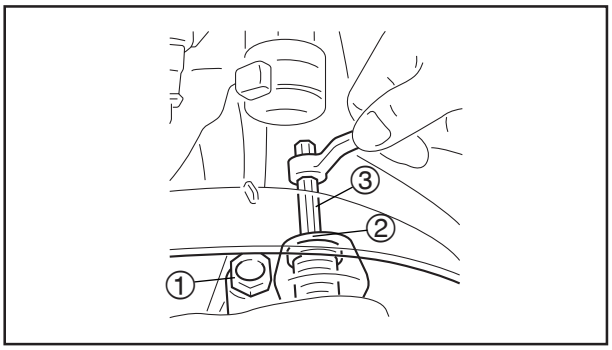
Order	Job/Part	Q'ty	Remarks
	Disassembling the front fork legs		Remove the parts in the order listed.
	Fork oil		Drain.
①	Fork spring	1	
②	Clamp / Boot	1/1	
③	Damper rod bolt / Gasket	1/1	
④	Inner tube	1	
⑤	Damper rod	1	
⑥	Rebound spring	1	Refer to "DISASSEMBLING AND INSTALLING THE FRONT FORK LEGS "
⑦	Oil flow stopper	1	
⑧	Oil seal clip	1	
⑨	Oil seal	1	
⑩	Outer tube	1	
			For assembly, reverse the disassembly procedure.

EAS00651
REMOVING THE FRONT FORK LEGS
The following procedure applies to both of the front fork legs.

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 front wheel is elevated.

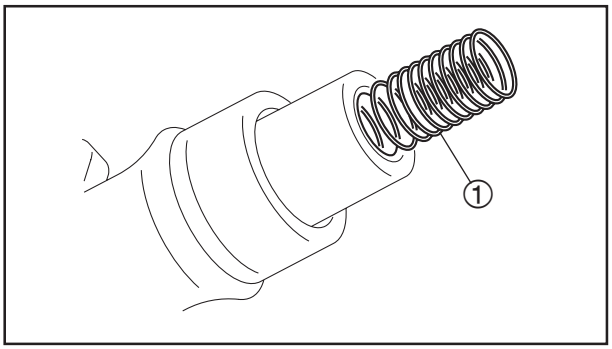


2. Loosen:
   - pinch bolt ①
3. Remove:
   - cap bolt ②
     (with a 10-mm hexagonal wrench③)

⚠WARNING
- **Fork spring will jump out after removing cap bolt.**

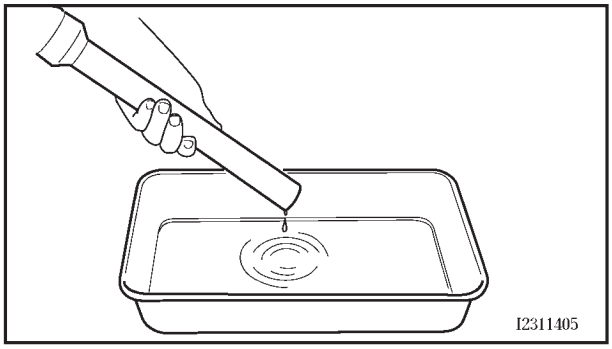
⚠WARNING
Before loosening the upper and lower bracket pinch bolts, support the front fork leg.

5. Remove:
   - front fork leg

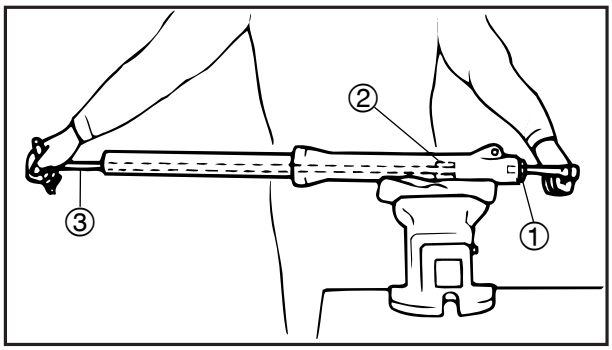


EAS00653
DISASSEMBLING THE FRONT FORK LEGS
The following procedure applies to both of the front fork legs.

1. Remove:
   - ●fork spring ①



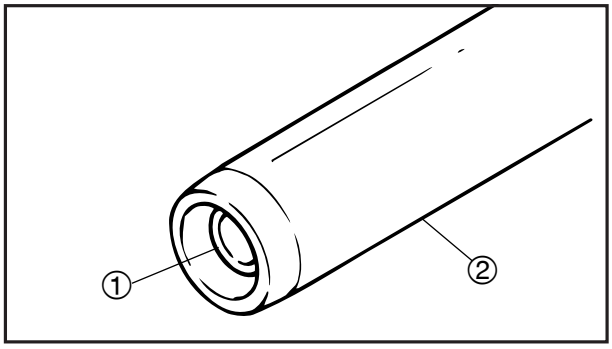
2. Drain:
   - ●fork oil



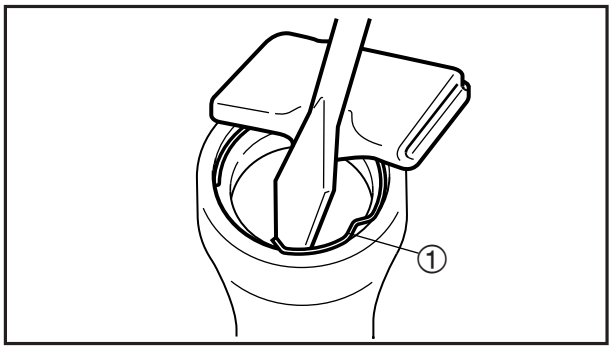
3. Remove:
   - ●damper rod assembly bolt ①
   - ●damper rod assembly

NOTE:
While holding the damper rod with the damper rod holder ② and T- handle③, loosen the damper rod assembly bolt.

Damper rod holder
90890-01294 (YM-01300-1)
T- handle
90890-01326 (YM-01326)

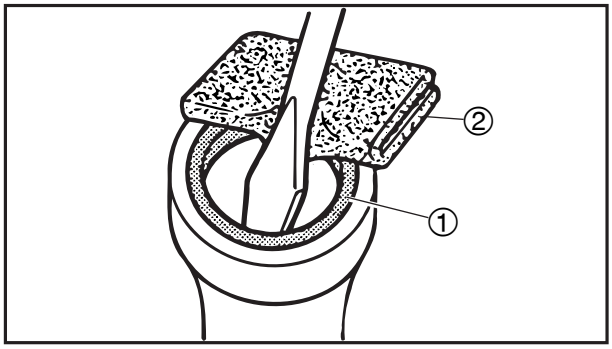


4. Remove:
   - ●damper rod ①
   - ●spring
   - ●inner tube ②



5. Remove:
   - oil seal clip ①
     (with a flat-head screwdriver)

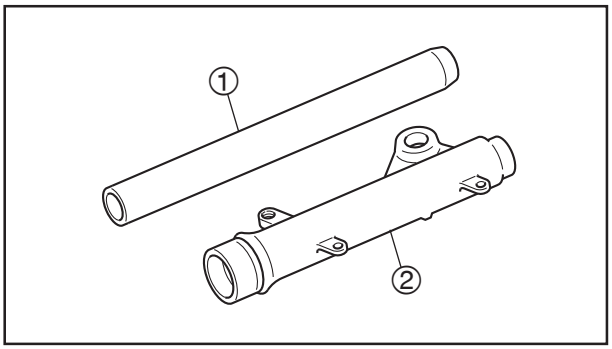
CAUTION:
Do not scratch the inner tube.



6. Remove:
   - oil seal ①

CAUTION:
Never reuse the oil seal.

- Rag ②

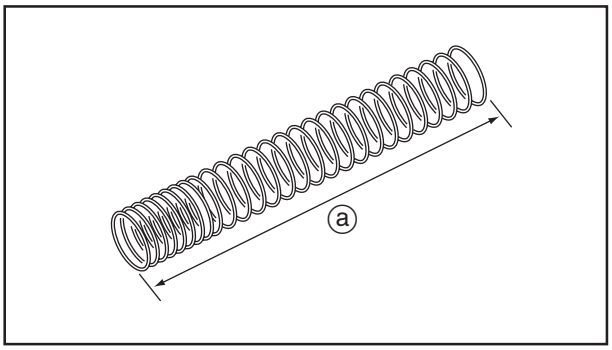


EAS00656
CHECKING THE FRONT FORK LEGS
The following procedure applies to both of the front fork legs.

1. Check:
   - inner tube ①
   - outer tube ②
   Bends/damage/scratches → Replace.

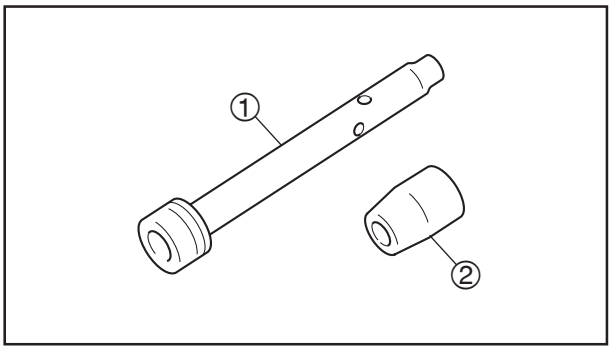
⚠WARNING

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

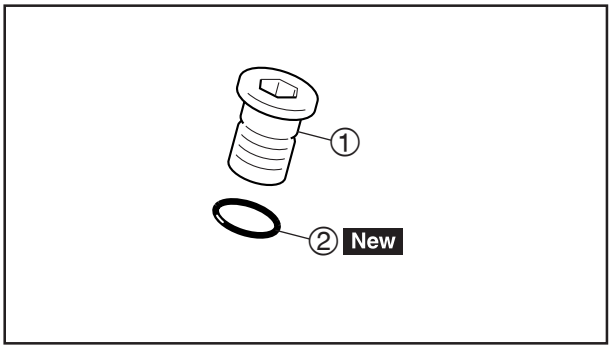


2. Measure:
   - spring free length ⓐ
   Out of specification → Replace.

Spring free length
257.5 mm (10.14 in)
<Limit> : 252.4 mm (9.94 in)



3. Check:
   - damper rod ①
   Damage/wear → Replace.
   Obstruction → Blow out all of the oil passages with compressed air.
   - oil flow stopper ②
   Damage → Replace.



4. Check:
   - cap bolt ①
   Damage/wear → Replace.
   - O-ring② New

EAS00658
ASSEMBLING THE FRONT FORK LEGS

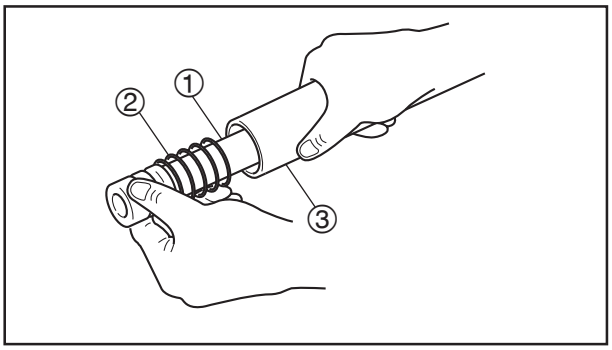
The following procedure applies to both of the front fork legs.

⚠ WARNING

- **Make sure the oil levels in both front fork legs are equal.**
- **Uneven oil levels can result in poor handling and a loss of stability.**

NOTE:

- When assembling the front fork leg, be sure to replace the following parts:
  - oil seal
  - dust seal
- Before assembling the front fork leg, make sure all of the components are clean.



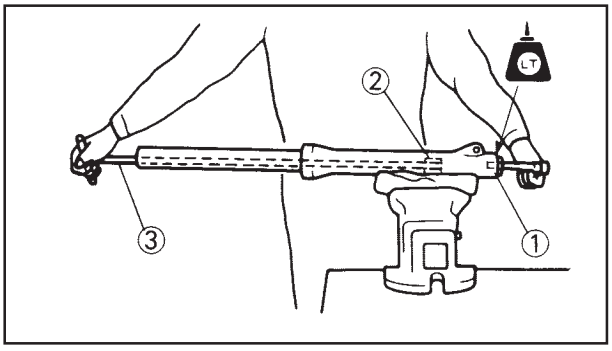
1. Install:
   - damper rod assembly ①
   - rebound spring ②

CAUTION:

Allow the damper rod assembly to slide slowly down the inner tube ③ until it protrudes from the bottom of the inner tube. Be careful not to damage the inner tube.

2. Lubricate:
   - inner tube's outer surface

	Recommended lubricant **Fork oil 10W or equivalent**



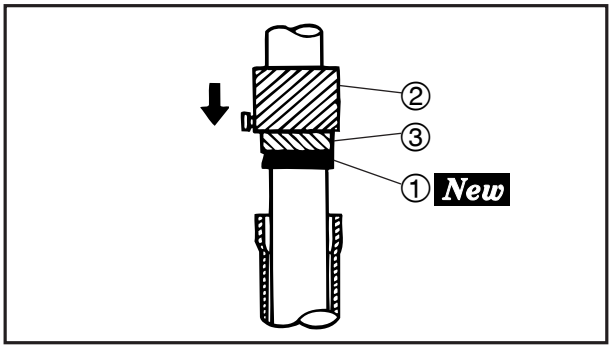
3. Tighten:
   - damper rod assembly bolt ①

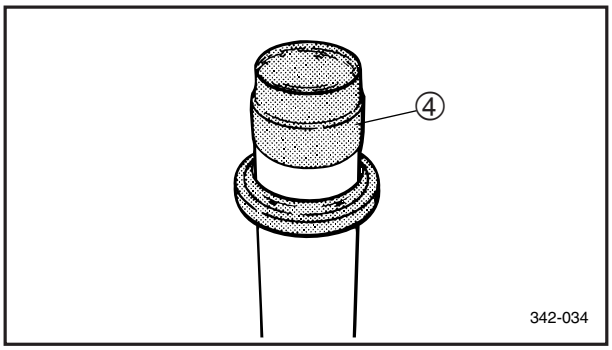
	30 Nm (3.0 m • kg, 21.7 ft • lb) **LOCTITE®204**

NOTE:

While holding the damper rod assembly with the damper rod holder ② and T-handle ③, tighten the damper rod assembly bolt.

Damper rod holder
90890-01294(YM-01300-1)
T-handle
90890-01326(YM-01326)



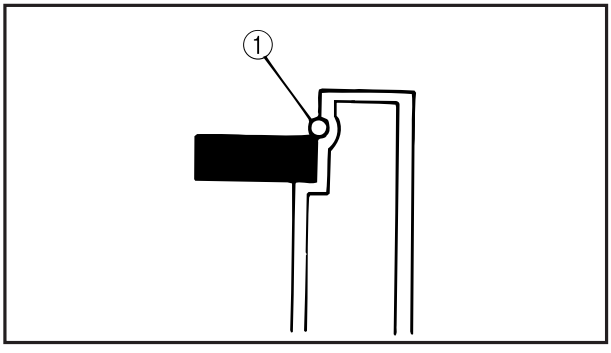


4. Install:
   - oil seal ① New
   (with the fork seal driver weight ② and adapter ③)

Fork seal driver weight
90890-01367(YM-A9409-7)
Adapter
90890-01400(YM-A9409-3)

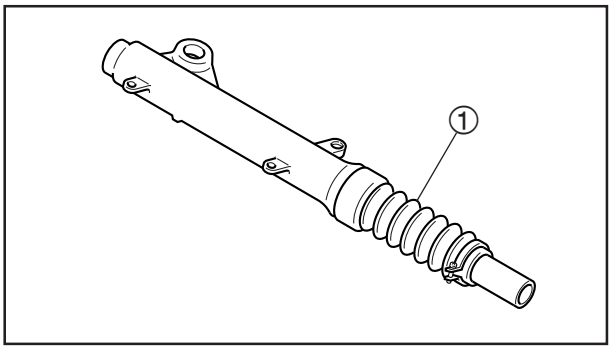
CAUTION:
Make sure the numbered side of the oil seal faces up.

NOTE:
- Before installing the oil seal, lubricate its lips with lithium soap base grease.
- Lubricate the outer surface of the inner tube with fork oil.
- Before installing the oil seal, cover the top of the front fork leg with a plastic bag ④ to protect the oil seal during installation.

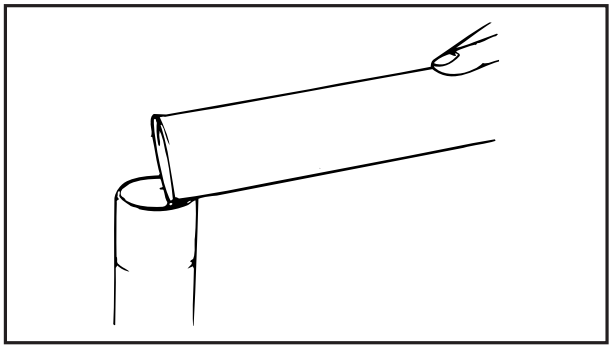


5. Install:
   - oil seal clip ①

NOTE:
Adjust the oil seal clip so that it fits into the outer tube's groove.



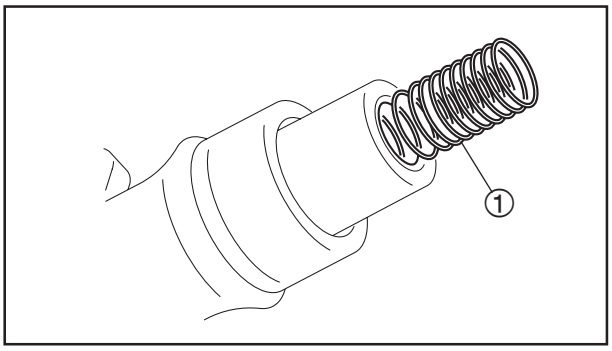
6. Install:
   - fork boot ①



7. Fill:
   - front fork leg
     (with the specified amount of the recommended fork oil)

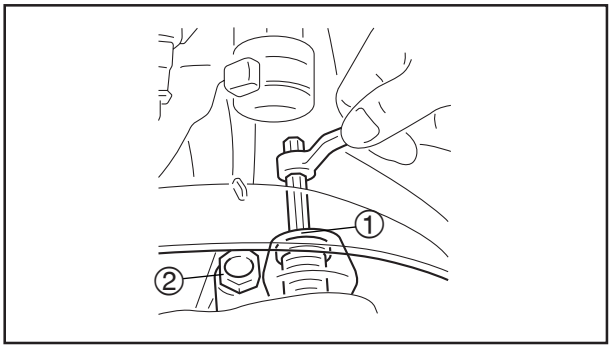
Quantity (each front fork leg)
0.126 L (0.11 Imp qt, 0.13 US qt)
Recommended oil
Fork oil 10W or equivalent

NOTE:
- While filling the front fork leg, keep it upright.
- After filling, slowly pump the front fork leg up and down to distribute the fork oil.



8. Install:
   - fork spring ①

NOTE:
- Install the spring with the smaller pitch facing up.
- Before installing the cap bolt, lubricate its O-ring with grease.
- Temporarily tighten the cap bolt.



EAS00663
INSTALLING THE FRONT FORK LEGS
The following procedure applies to both of the front fork legs.

1. Install:
   - front fork leg

NOTE:
Pull up the inner tube until it stops, then install the cap bolt.

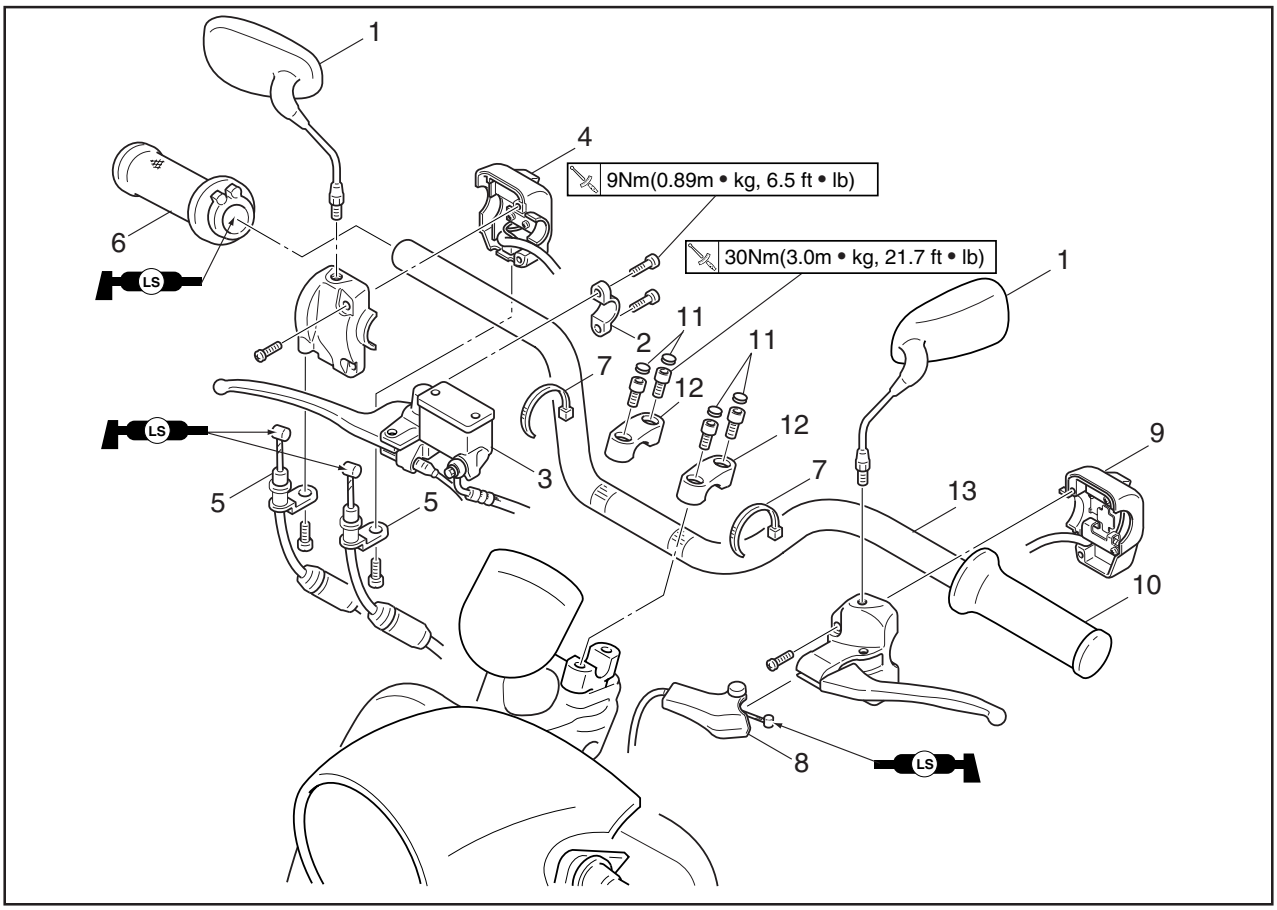
2. Tighten:
   - cap bolt ①

	45 Nm (4.5 m • kg, 32.5 ft • lb)

   - pinch bolt ②

	23 Nm (2.3 m • kg, 16.6 ft • lb)

EAS00664
HANDLEBAR



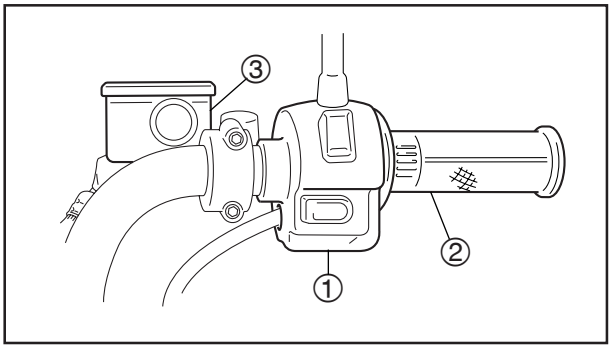
Order	Job/Part	Q'ty	Remarks
	Removing the handlebar		Remove the parts in the order listed.
1	Rear view mirror (left and right)	2	
2	Brake master cylinder bracket	1	
3	Brake master cylinder assembly	1	
4	Handlebar switch assembly (right)	1	
5	Throttle cable	2	
6	Throttle grip assembly	1	
7	Band	2	
8	Rear brake cable	1	
9	Handlebar switch assembly (left)	1	
10	Handlebar grip	1	
11	Cap	4	
12	Handlebar upper holder	2	
13	Handlebar assembly	1	
			For installation, reverse the removal procedure.

EAS00666
REMOVING THE HANDLEBAR

1. Stand the scooter on a level surface.

⚠WARNING

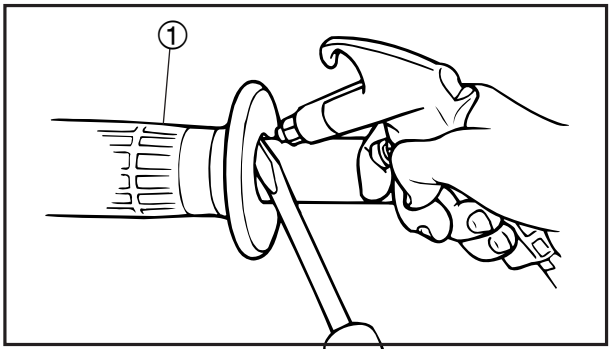
Securely support the scooter so that there is no danger of it falling over.



2. Remove:
   - ●handlebar switch assembly (right)①
   - ●throttle grip assembly ②
   - ●brake master cylinder assembly ③

NOTE:

While removing the handlebar switch assembly (right), pull back the rubber cover.



3. Remove:
   - ●handlebar grip ①

NOTE:

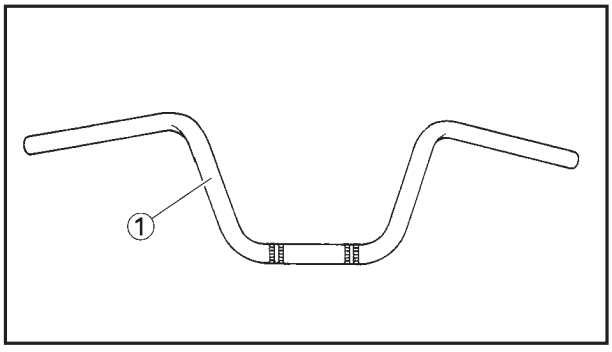
Blow compressed air between the handlebar and the handlebar grip, and gradually push the grip off the handlebar.

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

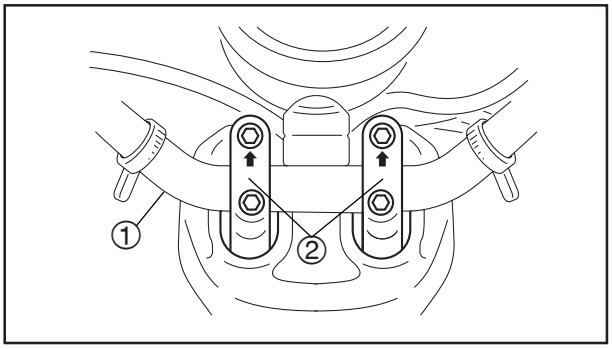
Do not attempt to straighten a bent handlebar as this may dangerously weaken it.

EAS00671
INSTALLING THE HANDLEBAR

1. Stand the scooter on a level surface.

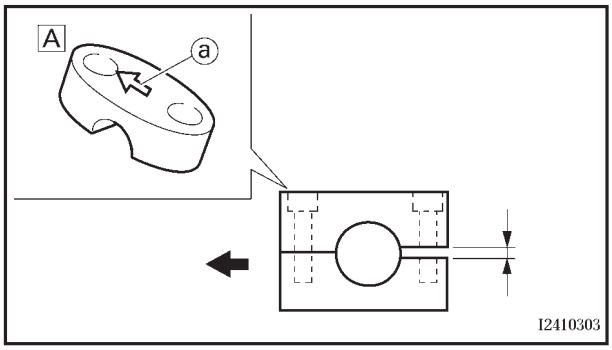
⚠ WARNING

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



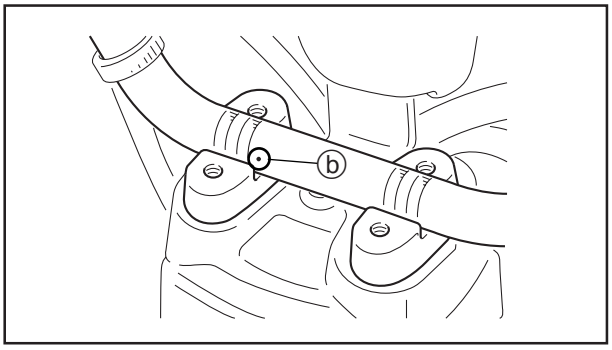
2. Install:
   - handlebar ①
   - upper handlebar holders ②

30 Nm (3.0 m • kg, 21.7 ft • lb)



CAUTION:

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



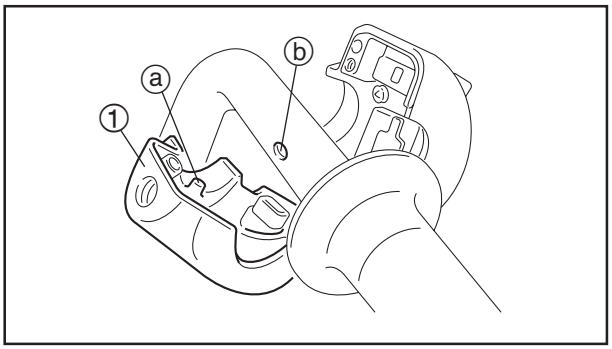
NOTE:

- The upper handlebar holders should be installed with the arrow marks ⓐ facing forward A.
- Align the match marks ⓑ on the handlebar with the upper surface of the lower handlebar holders.

3. Install:
   - handlebar grip

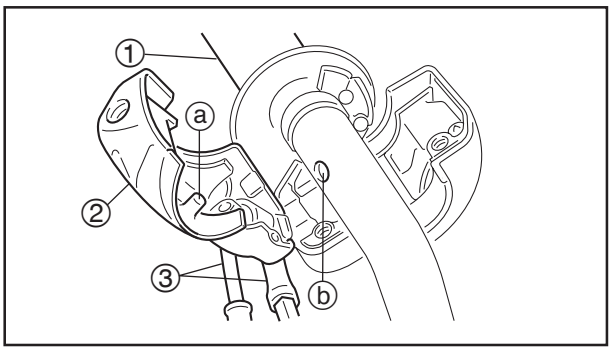
NOTE:

Before installing the handlebar grip, apply the bond.



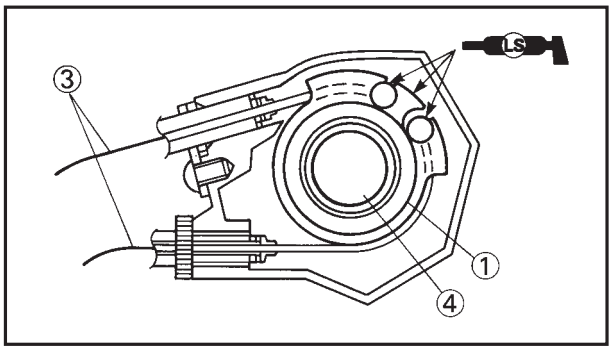
4. Install:
   - left handlebar switch ①

NOTE:
Align the projection ⓐ on the left handlebar switch with the hole ⓑ in the handlebar.

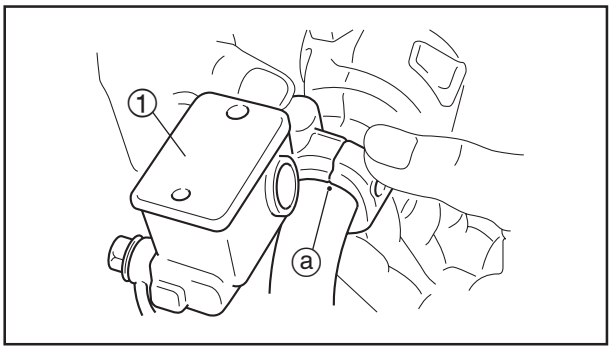


5. Install:
   - throttle grip ①
   - right handlebar switch②
   - throttle cables ③

NOTE:
- Lubricate the inside of the throttle grip with a thin coat of lithium-soap-based grease and install it onto the handlebar④.
- Align the projection ⓐ on the right handlebar switch with the hole ⓑ in the handlebar.



⚠WARNING
Make sure the throttle grip operates smoothly.



6. Install:
   - front brake master cylinder ①

NOTE:
- Align the mating surfaces of the front brake master cylinder with the punch mark ⓐ on the handlebar.

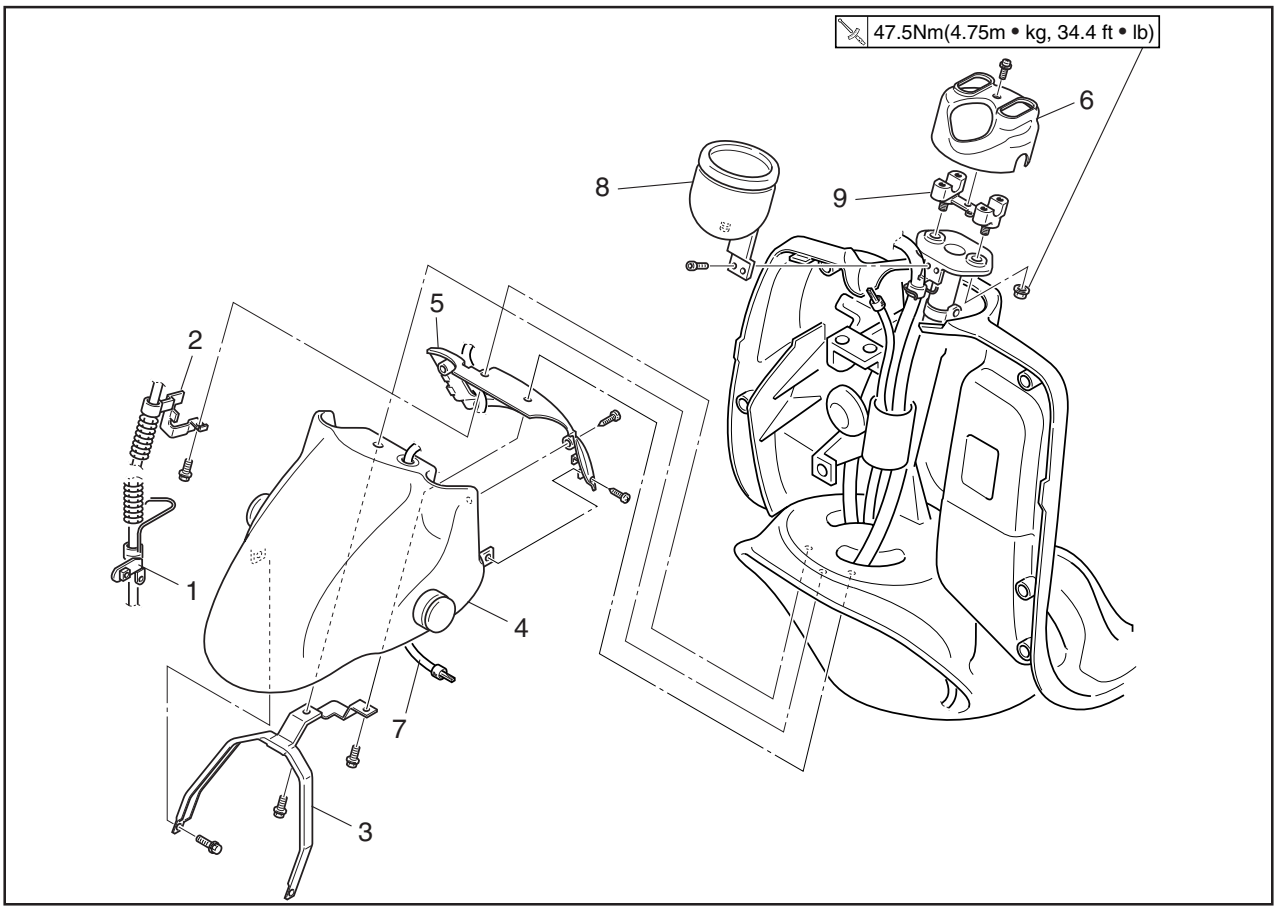
7. Adjust:
   - throttle cable free play
     Refer to "ADJUSTING THE THROTTLE CABLE FREE PLAY" in chapter 3.

Throttle cable free play (at the flange of the throttle grip)
3 ~ 5 mm(0.12 ~ 0.20 in)

EAS00675

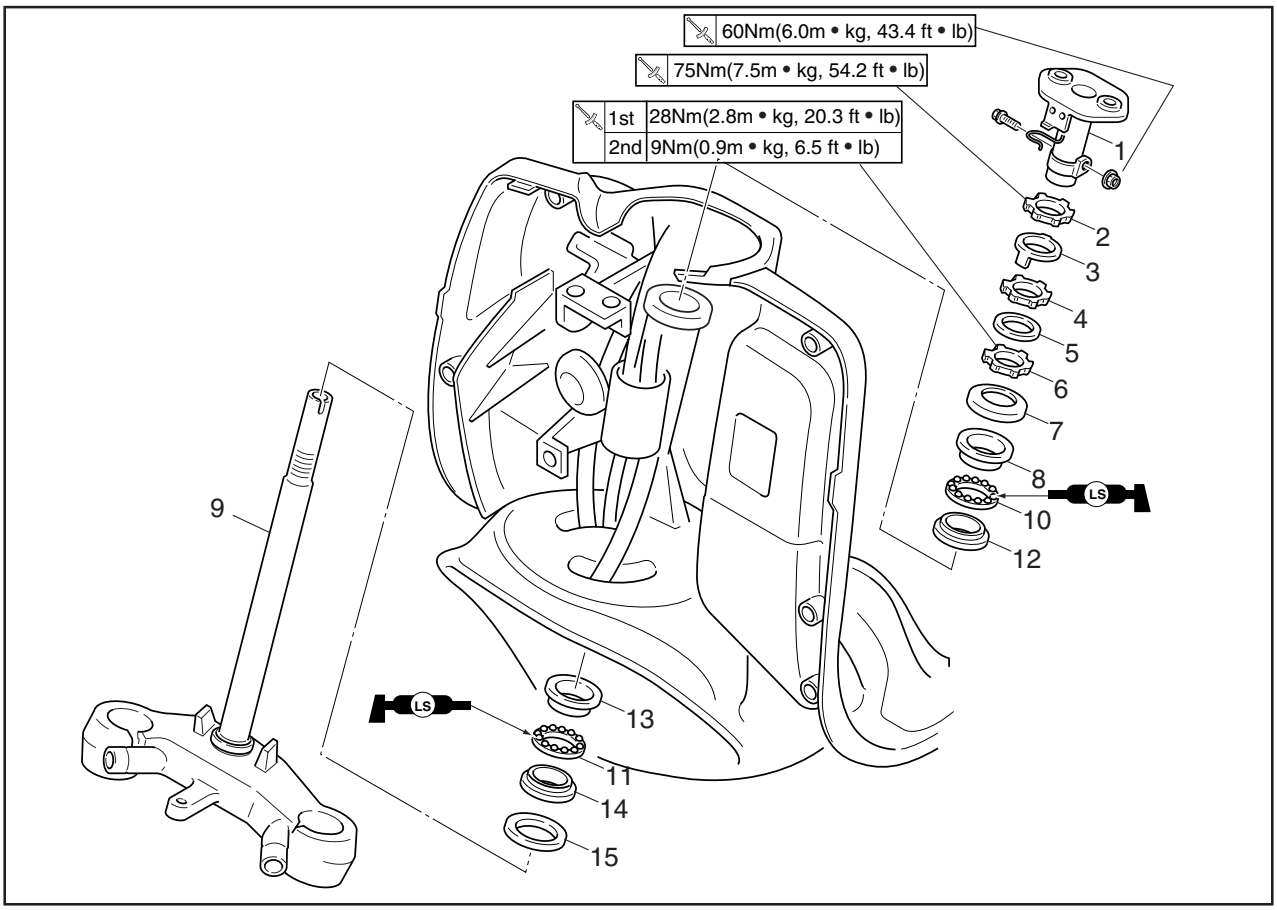
STEERING HEAD

LOWER FENDER COVER AND HANDLEBAR LOWER HOLDER

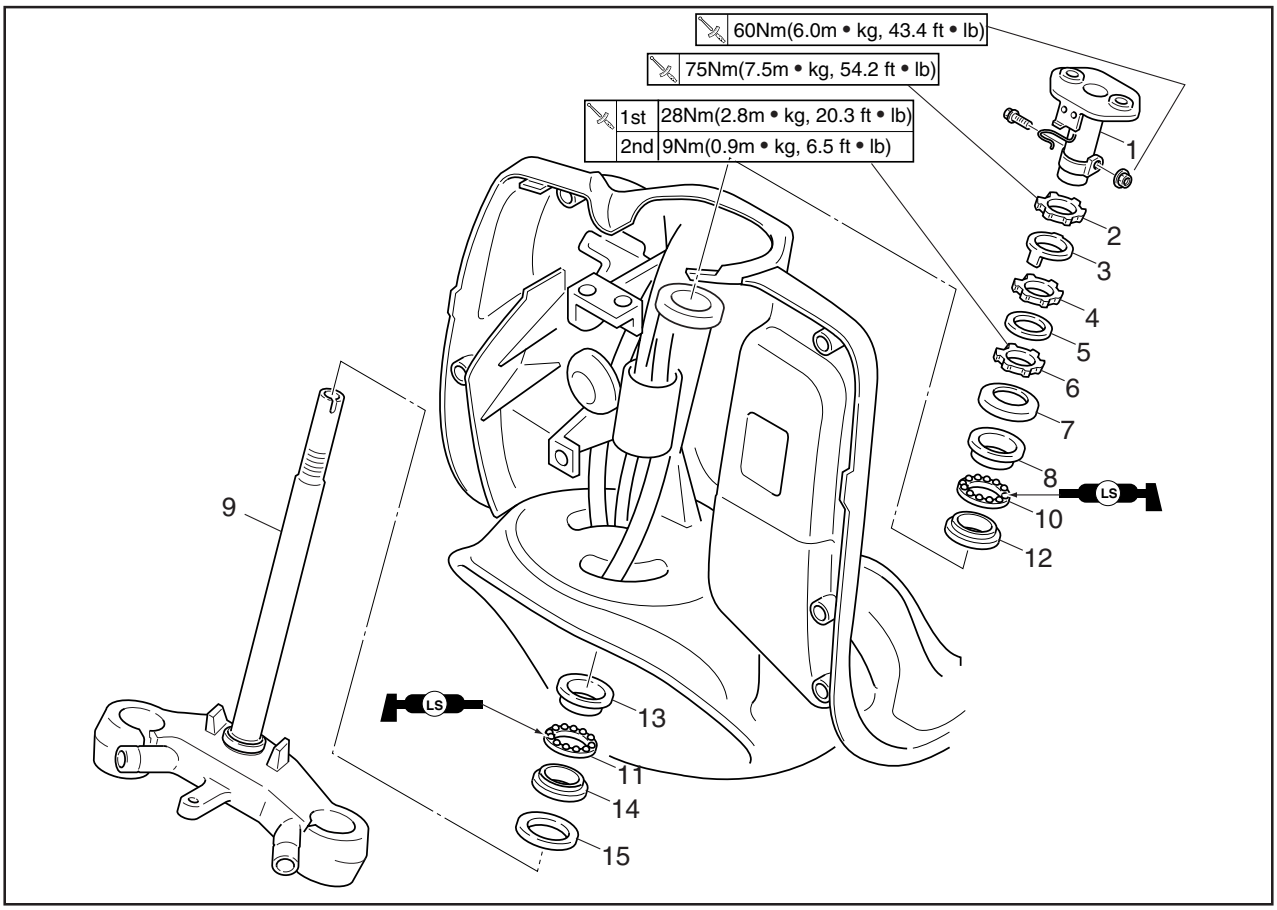


Order	Job/Part	Q'ty	Remarks
	Removing the lower fender cover and handlebar lower holder		Remove the parts in the order listed.
	Front wheel		Refer to "FRONT WHEEL AND BRAKE DISC".
	Leg shield 1		Refer to "COVER AND PANEL" in chapter 3.
	Front fork legs		Refer to "FRONT FORK".
	Handlebar assembly		Refer to "HANDLEBAR".
1	Brake hose holder 1	1	
2	Brake hose holder 2	1	
3	Lower fender bracket	1	
4	Lower fender cover (front)	1	
5	Lower fender cover (inner)	1	
6	Handlebar cover	1	
7	Speedometer cable	1	
8	Speedometer assembly	1	
9	Handlebar lower holder	1	
			For installation, reverse the removal procedure.

EAS00675
LOWER BRACKET



Order	Job/Part	Q'ty	Remarks
	Removing the lower bracket		Remove the parts in the order listed.
	Front wheel		Refer to "FRONT WHEEL AND BRAKE DISC".
	Handlebar lower holder		Refer to "LOWER FENDER COVER AND HANDLEBAR LOWER HOLDER".
1	Handlebar holder bracket	1	
2	Upper ring nut	1	
3	Lock washer	1	
4	Center ring nut	1	
5	Rubber washer	1	
6	Lower ring nut	1	
7	Bearing race cover	1	
8	Upper bearing inner race	1	
9	Lower bracket	1	
10	Upper bearing	1	
11	Lower bearing	1	
12	Upper bearing outer race	1	
13	Lower bearing outer race	1	
14	Lower bearing inner race	1	



Order	Job/Part	Q'ty	Remarks
15	Rubber washer	1	For installation, reverse the removal procedure.

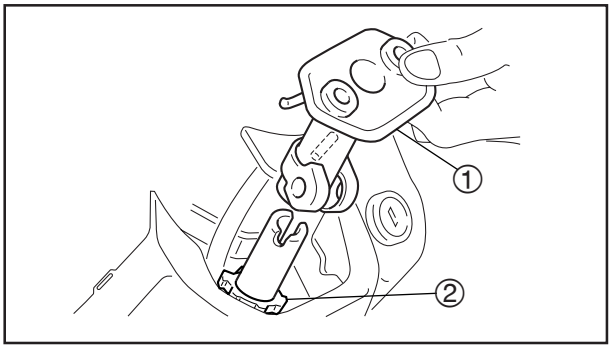
EAS00678

REMOVING THE LOWER BRACKET

1. Stand the scooter on a level surface.

⚠WARNING

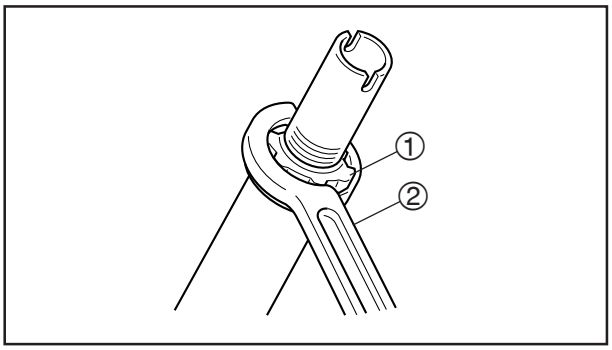
Securely support the scooter so that there is no danger of it falling over.



2. Remove:
   - handlebar holder bracket ①

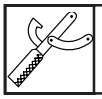
NOTE:

- Remove the handlebar holder bracket by loosening the upper ring nut② gradually.



3. Remove:
   - ring nut ①

   (with the ring nut wrench ②)



Ring nut wrench
90890-01268(YU-01268)

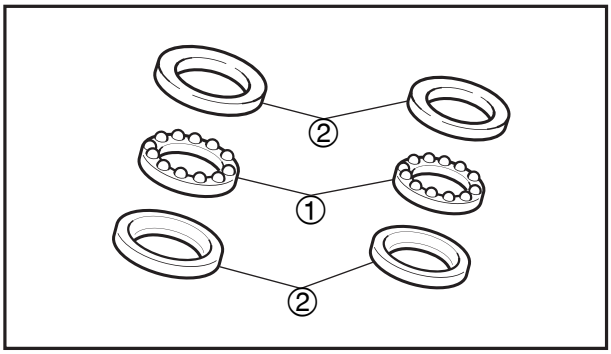
⚠WARNING

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

EAS00682
CHECKING THE STEERING HEAD

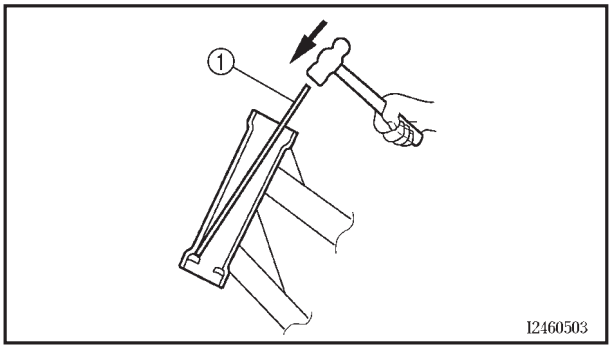
1. Wash:
   - bearings
   - bearing races

	Recommended cleaning solvent **Kerosene**



2. Check:
   - bearings ①
   - bearing races ②

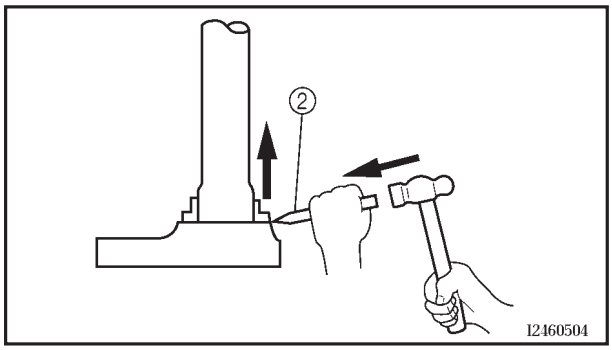
   Damage/pitting → Replace.



3. Replace:
   - bearings
   - bearing races

****

a. Remove the bearing races from the steering head pipe with a long rod ① and hammer.
b. Remove the bearing race from the lower bracket with a floor chisel ② and hammer.
c. Install a new rubber washer and 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 washer.

****

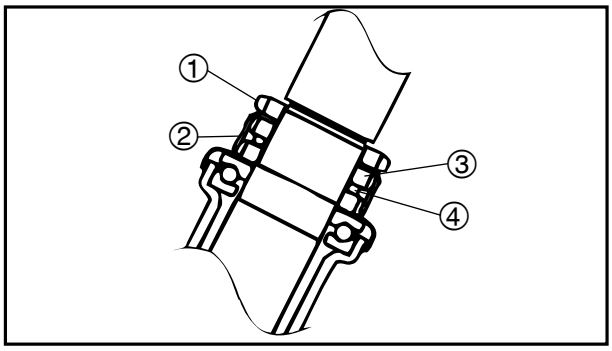
4. Check:
   - handlebar lower holder
   - lower bracket

   (along with the steering stem)
   Bends/cracks/damage → Replace.

EAS00684
INSTALLING THE STEERING HEAD

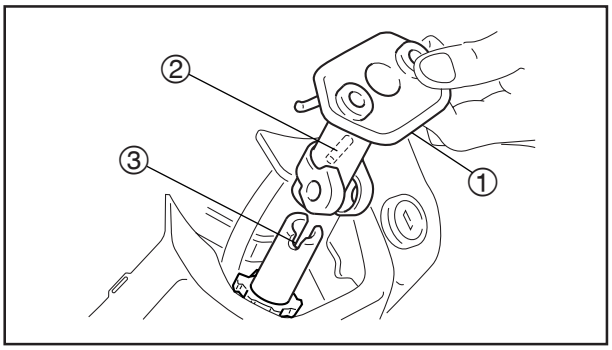
1. Lubricate:
   - upper bearing
   - lower bearing
   - bearing races

	Recommended lubricant **Lithium-soap-based grease**



2. Install:
   - lower ring nut ①
   - rubber washer ②
   - center ring nut ③
   - lock washer ④
   - upper ring nut ⑤

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



3. Install:
   - handlebar holder bracket ①

	60 Nm (6.0 m • kg, 43.4 ft • lb)

NOTE:

Align the handlebar holder bracket across rod ② on the lower bracket concave③.

EAS00692
REMOVING THE REAR SHOCK ABSORBER ASSEMBLY

1. Stand the scooter on a level surface.

⚠WARNING

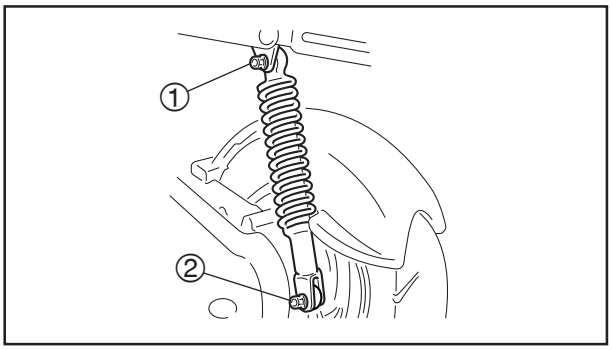
Securely support the scooter so that there is no danger of it falling over.

NOTE:

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

2. Remove:
   - rear carrier
   - side cover(left)

   Refer to “COVER AND PANEL” in chapter 3.



3. Remove:
   - rear shock absorber nut (upper)①
   - rear shock absorber bolt (lower)②

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.
   - bushings
     Damage/wear → Replace.
   - dust seals
     Damage/wear → Replace.
   - bolts
     Bends/damage/wear → Replace.

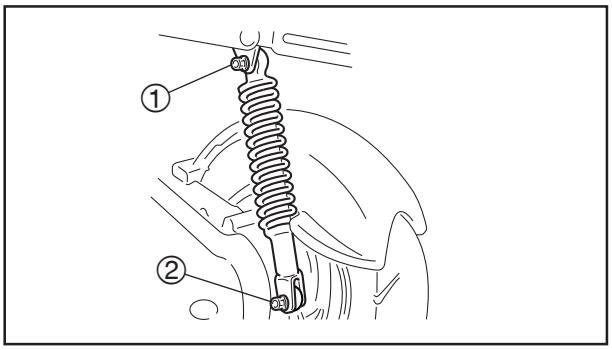
EAS00698

INSTALLING THE REAR SHOCK ABSORBER ASSEMBLY

1. Lubricate:
   - spacer
   - bush

	Recommended lubricant **Molybdenum disulfide grease**

2. Install:
   - rear shock absorber assembly



3. Tighten:
   - rear shock absorber assembly upper nut①

	30 Nm (3.0 m • kg, 21.7 ft • lb)

   - rear shock absorber assembly lower bolt②

	18 Nm (1.8 m • kg, 13.0 ft • lb)

4. Install:
   - side cover(left)
   - rear carrier

   Refer to “COVER AND PANEL” in chapter 3.

CHAPTER 5
ENGINE

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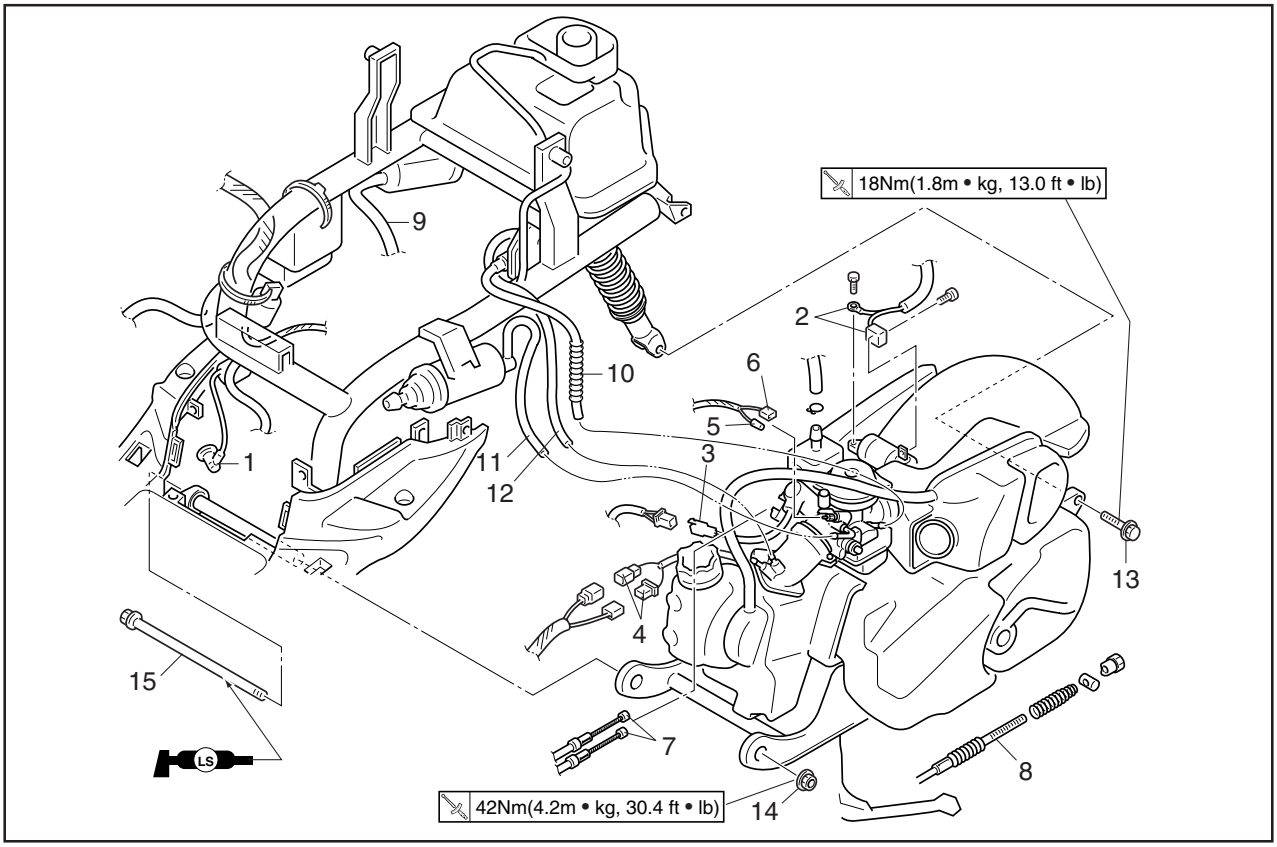
EAS00188

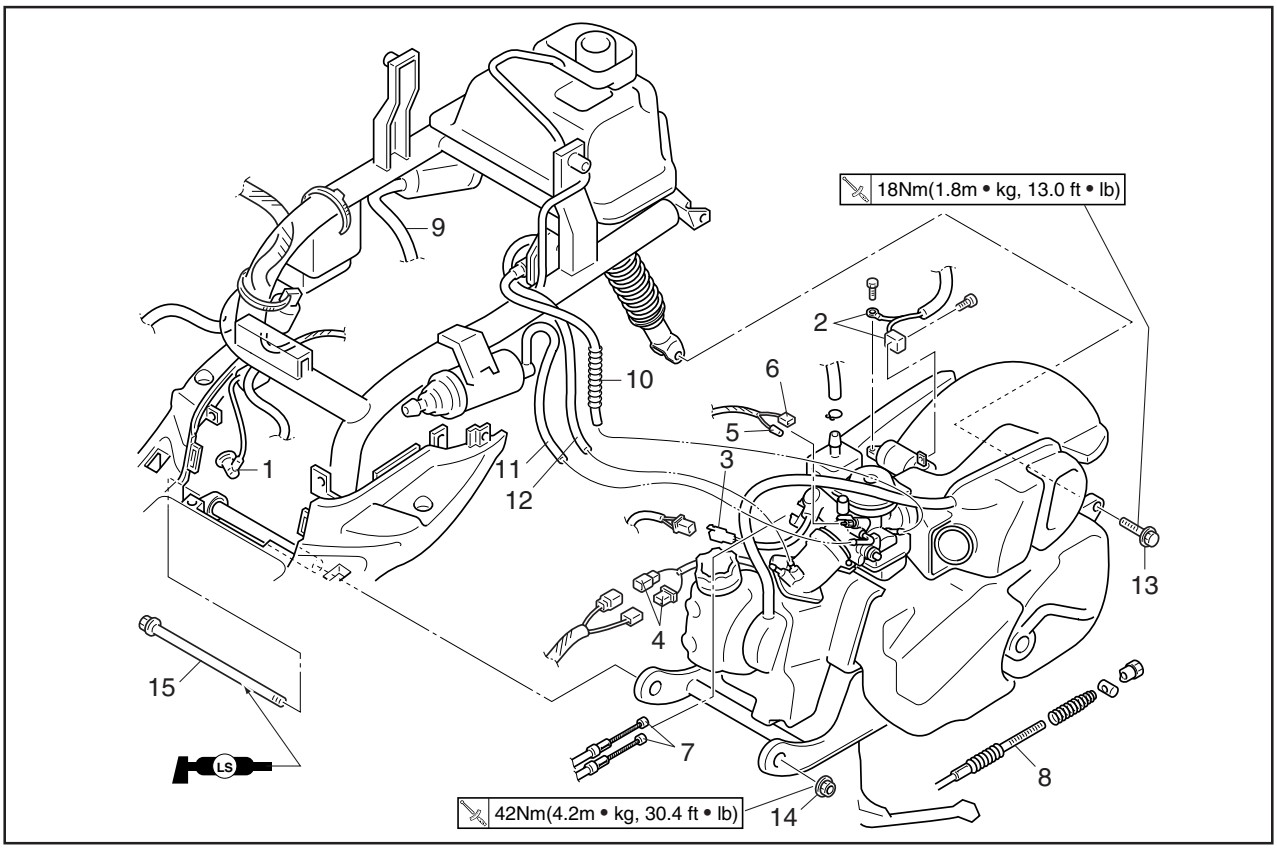
ENGINE

ENGINE

LEADS, HOSES AND REAR BRAKE

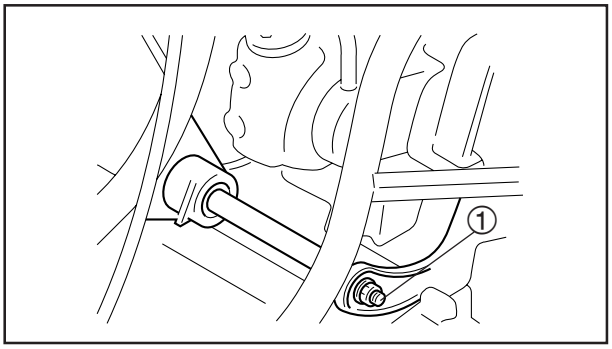


Order	Job/Part	Q'ty	Remarks
	Removing the leads, hoses and rear brake		Remove the parts in the order listed.
	Seat/Rear carrier Side cover (left / right)/Fuel tank cap Rear cover/Hook(left and right) Front cover/Trunk		Refer to "COVER AND PANEL"in chapter 3.
1	Spark plug cap	1	
2	Starting motor lead / Earth lead	1/1	
3	Auto choke lead	1	
4	C.D.I. magneto lead / Stator lead	1/1	
5	Carburetor heater positive lead	1	**CAUTION:**
6	Carburetor heater negative lead	1	**First, disconnect the negative lead, and then the positive lead.**
7	Throttle cable	2	
8	Brake cable (adjuster / pin)	1	
9	Air inlet hose	1	Refer to " INSTALLING THE ENGINE ".
10	Fuel hose	1	
11	Carburetor inlet hose	1	
12	Fuel cock vacuum pipe	1	
13	Rear shock absorber bolt	1	
14	Self lock nut	1	
15	Engine mounting bolt	1	



Order	Job/Part	Q'ty	Remarks
			For installation, reverse the removal procedure.

NOTE:
Make sure to reset the oil change indicator when the oil is changed.



EAS00192
INSTALLING THE ENGINE

1. Install:
   - engine bracket bolt ①

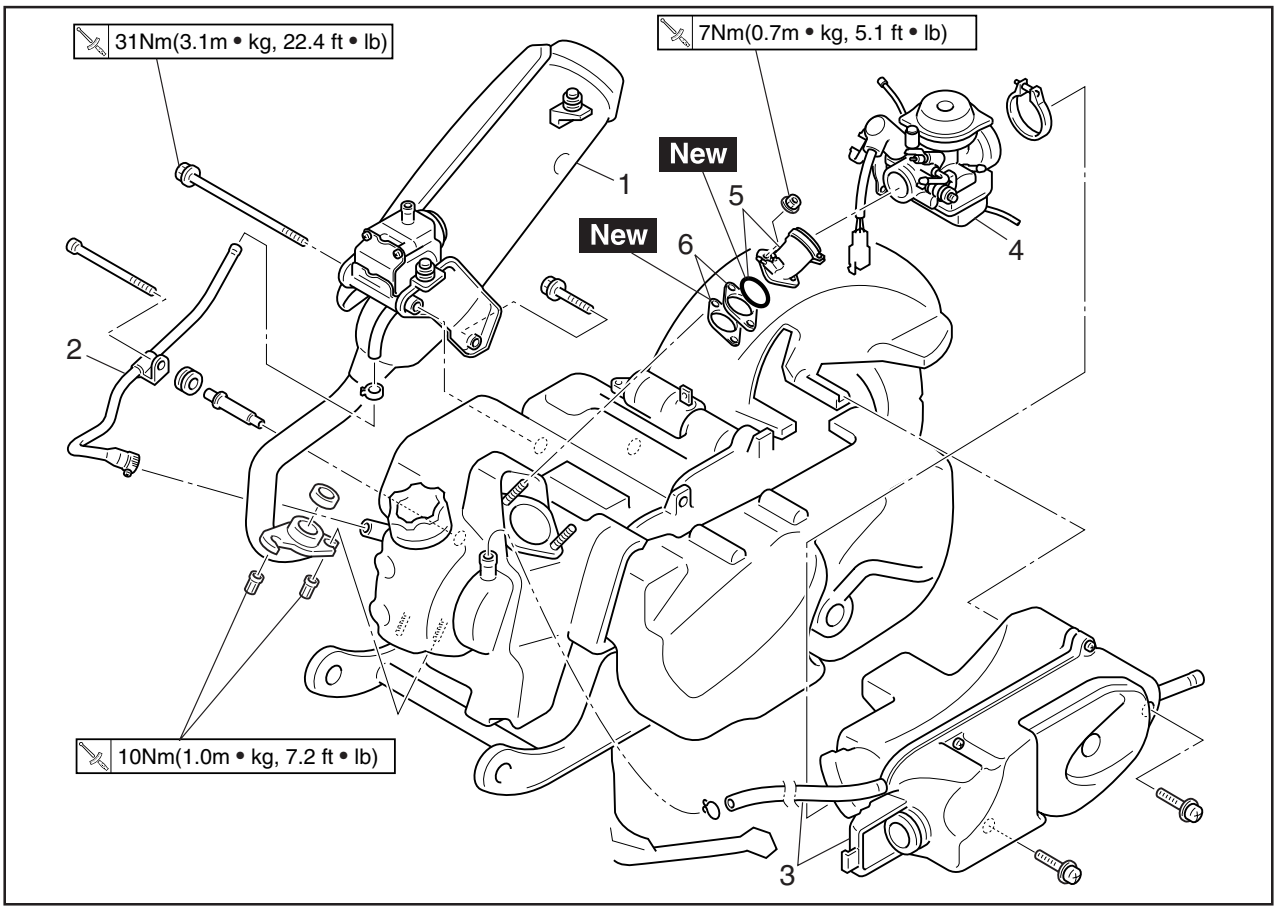
NOTE:
Do not fully tighten the bolts.

2. Tighten:
   - engine bracket bolt①

	55Nm(5.5 m • kg, 39.8 ft • lb)

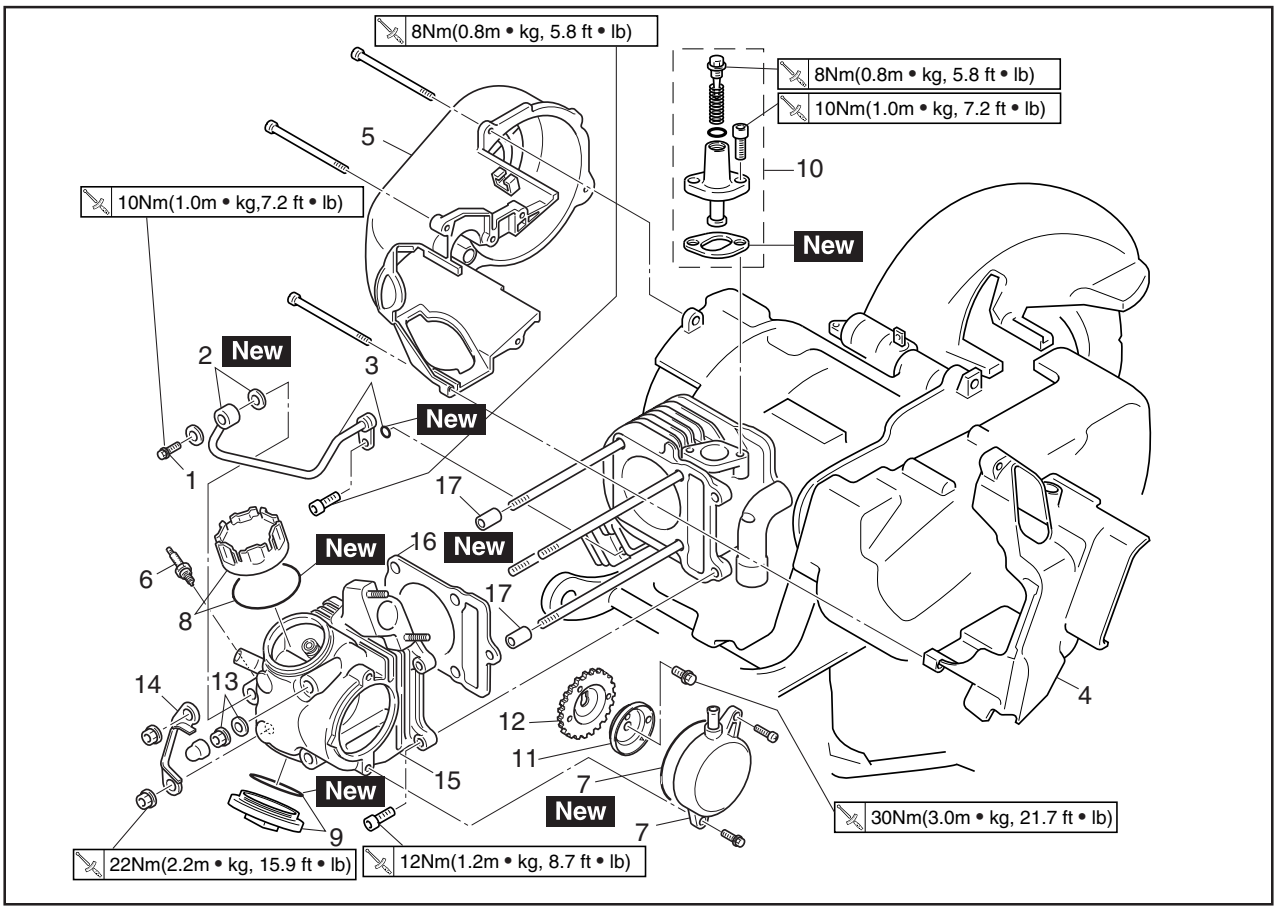
   - engine

MAINFOLD, AIR FILTER AND MUFFLER ASSEMBLY

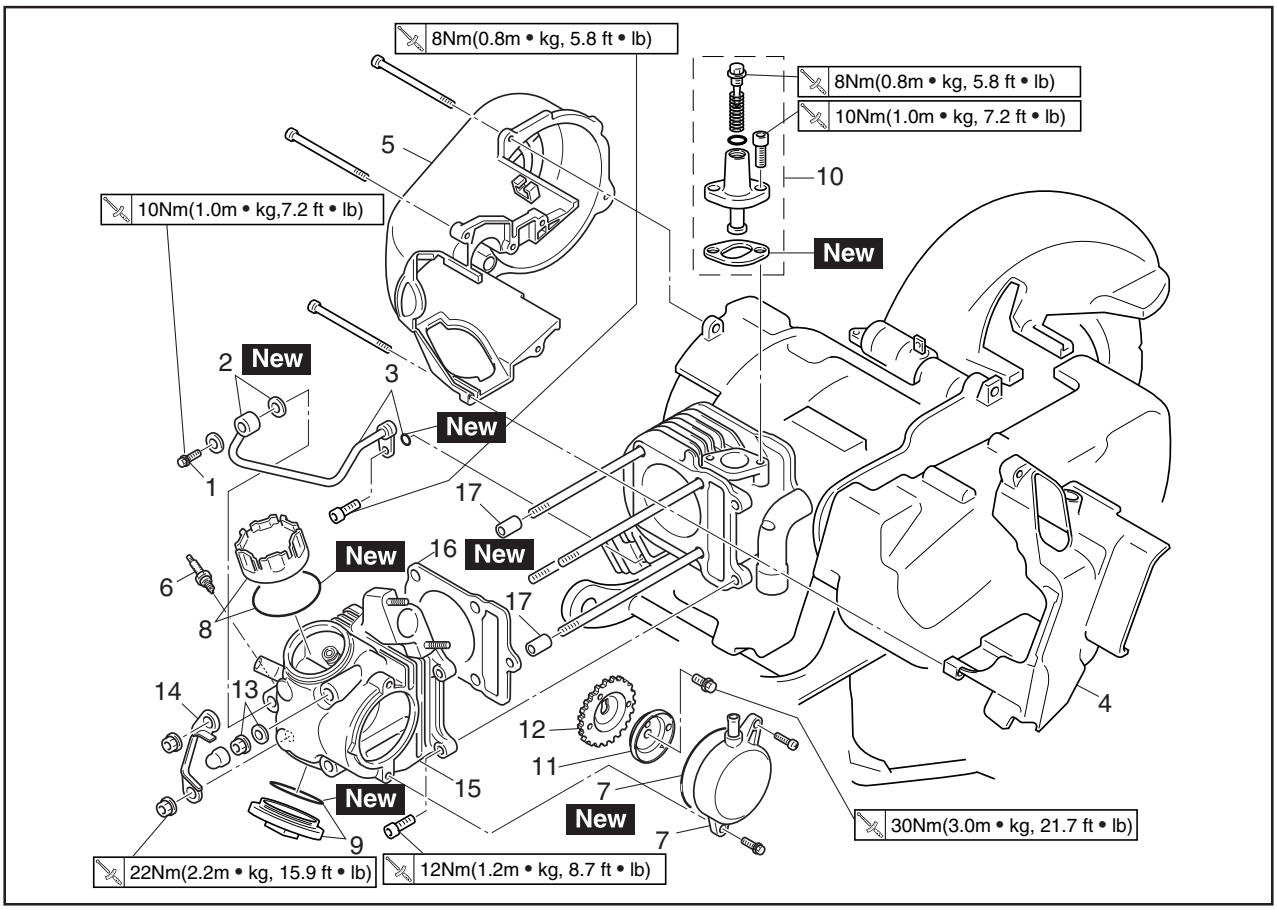


Order	Job/Part	Q'ty	Remarks
	Removing the mainfold, air filter and muffler assembly		Remove the parts in the order listed.
	Starting motor lead / Earth lead		Refer to "LEADS, HOSES AND REAR BRAKE".
	Auto choke lead		
	C.D.I. magneto lead / Stator lead		
	Throttle cable		
	Rear brake cable (adjuster / pin)		
	Hose(from AI air filter)		Refer to "AIR INDUCTION SYSTEM" in chapter 6.
	Vacuum hose (from mainfold)		
	Hose(to cylinder head)		
1	Muffler assembly	1	
2	AI pipe	1	
3	Air filter / Breather hose	1/1	
4	Carburetor	1	
5	Mainfold / O-ring	1/1	
6	Joint / Gasket	1/1	
			For installation, reverse the removal procedure.

EAS00221
CYLINDER HEAD



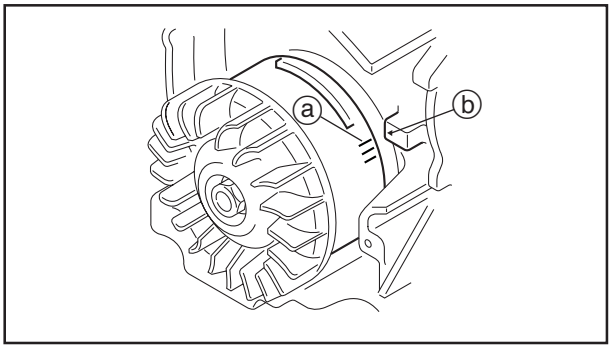
Order	Job/Part	Q'ty	Remarks
	Removing the cylinder head		Remove the parts in the order listed.
	Muffler assembly		Refer to "MAINFOLD, AIR FILTER AND MUFFLER ASSEMBLY".
	Air filter		
	Mainfold		
1	Unit bolt	1	
2	Cooper washer	2	
3	Oil delivery pipe / O-ring	1/1	
4	Air shroud 1	1	
5	Air shroud 2	1	
6	Spark plug	1	
7	Breather / O-ring	1/1	
8	Engine oil cap / O-ring	1/1	
9	Valve cover / O-ring	1/1	
10	Timing chain tensioner assembly	1	
11	Camshaft sprocket plate	1	
12	Camshaft sprocket	1	Refer to " REMOVING THE CYLINDER HEAD".
13	Nut / Washer	4/2	
14	Plate	1	
15	Cylinder head	1	
16	Cylinder head gasket	1	



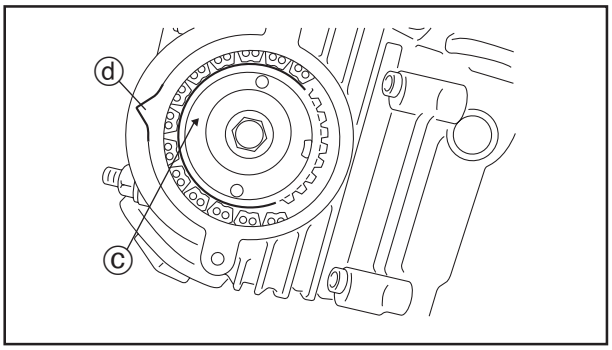
Order	Job/Part	Q'ty	Remarks
17	Dowel pin	2	For installation, reverse the removal procedure.

EAS00225
REMOVING THE CYLINDER HEAD

1. Remove :
   - oil delivery pipe
   - engine oil cap
   - valve cover
   - Air shroud 1
   - Air shroud 2
   - breather



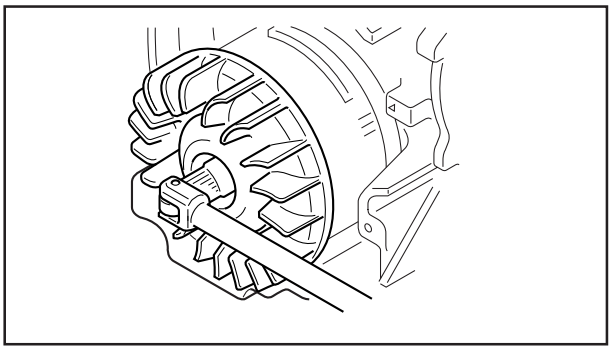
2. Align:
   - "I" mark ⓐ on the magneto (with the stationary pointer ⓑ on the crankcase cover)



****

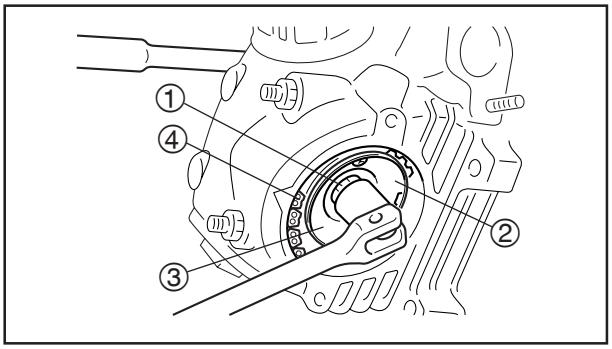
a. Turn the primary sheave counterclockwise.
b. When the piston is at TDC on the compression stroke, align the "I" mark ⓒ on the camshaft sprocket with the mark ⓓ on the cylinder head.

****



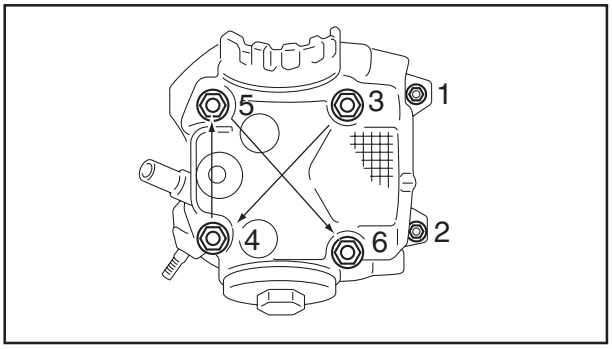
3. Loosen:
   - timing chain tensioner bolt
   - camshaft sprocket plate bolt ①

   While holding the crank bolt with a wrench, remove the camshaft sprocket plate bolt ①.



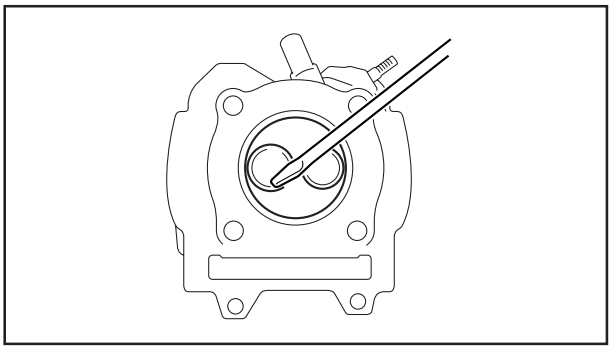
4. Remove:
   - timing chain tensioner (along with the gasket)
   - camshaft sprocket plate ②
   - camshaft sprocket ③
   - timing chain ④

NOTE:
- To prevent the timing chain from falling into the crankcase, fasten it with a wire.
- While holding the C.D.I. magneto bolt with a wrench, remove the camshaft sprocket plate bolt ①.



5. Remove:
   - cylinder head

NOTE:
- Loosen the nuts in the proper sequence as shown.
- Loosen each nut 1/2 of a turn at a time. After all of the nuts are fully loosened, remove them.

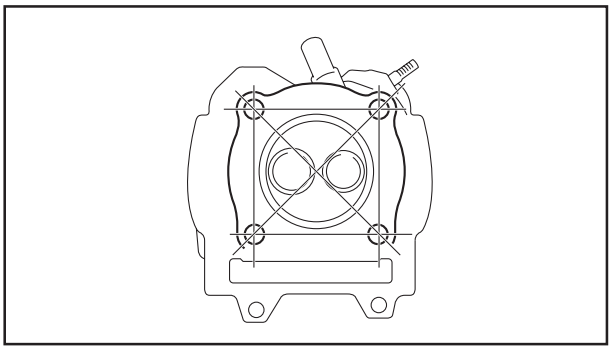


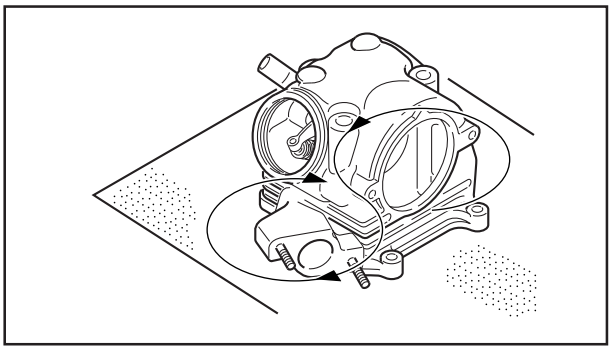
EAS00227
CHECKING THE CYLINDER HEAD

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 thread
- valve seats

2. Check:
   - cylinder head
     Damage/scratches → Replace.





3. Measure:
   - cylinder head warpage
     Out of specification → Resurface the cylinder head.

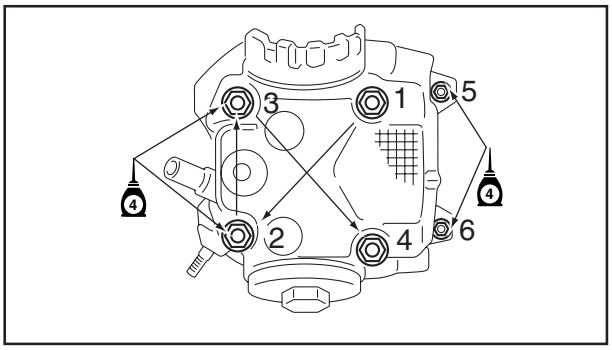
Maximum cylinder head warpage
Less than0.05 mm(0.002 in)

****

a. Place a straightedge and a thickness gauge 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.

****



EAS00231
INSTALLING THE CYLINDER HEAD

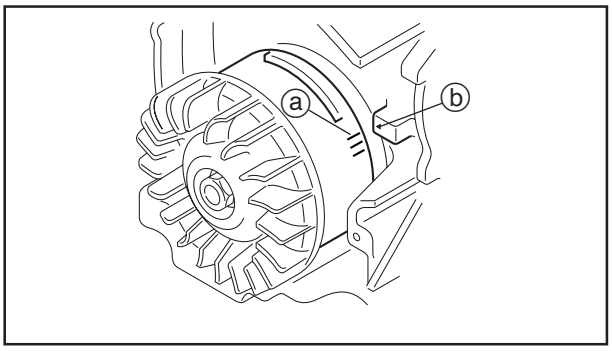
1. Install:
   - gasket **New**
   - dowel pins
2. Install:
   - cylinder head
3. Tighten:
   - cylinder head nuts

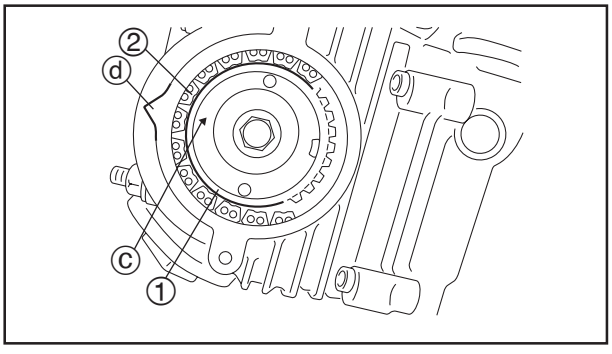
	22 Nm (2.2 m • kg, 15.9 ft • lb)

   - cylinder head bolts

	12 Nm (1.2 m • kg, 8.7 ft • lb)

NOTE:
- Lubricate the cylinder head nuts with engine oil.
- Tighten the cylinder head nuts in the proper tightening sequence as shown and torque them in two stages.





4. Install:
   - camshaft sprocket ①
   - timing chain ②

****

a. Turn the primary pulley counterclockwise.
b. Align the "I" mark ⓐ on the C.D.I. magneto rotor with the stationary pointer ⓑ on the crankcase cover.
c. Align the "I" mark ⓒ on the camshaft sprocket with the stationary pointer ⓓ on the cylinder head.
d. Install the timing chain onto the camshaft sprocket, and then install the camshaft sprocket onto the camshaft.

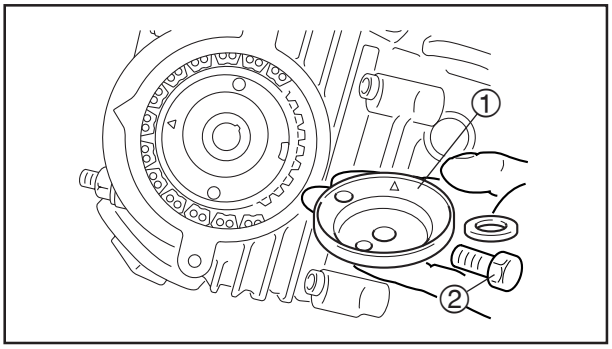
NOTE:
- When installing the camshaft sprocket, be sure to keep the timing chain as tight as possible on the exhaust side.
- Align the pin on the camshaft with the slot in the camshaft sprocket.

CAUTION:

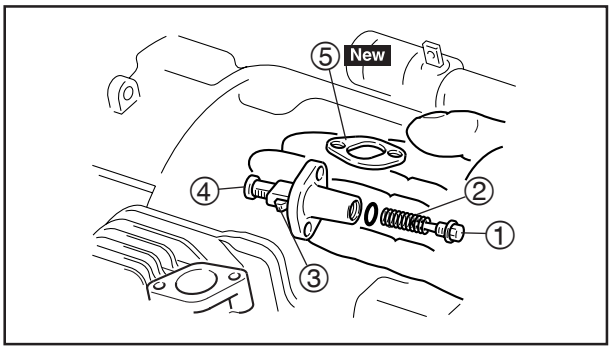
Do not turn the crankshaft when installing the camshaft to avoid damage or improper valve timing.

e. While holding the camshaft, temporarily tighten the camshaft sprocket bolts.
f. Remove the wire from the timing chain.

****



5. Install
   - ●camshaft sprocket plate ①
   - ●camshaft sprocket plate bolt ②



6. Install:
   - ●timing chain tensioner gasket **New**
   - ●timing chain tensioner

****

a. Remove the cap bolt ① and spring ②.
b. Release the timing chain tensioner one-way cam ③ and push the timing chain tensioner rod ④ all the way into the timing chain tensioner housing.
c. Install the timing chain tensioner and gasket ⑤ onto the cylinder.

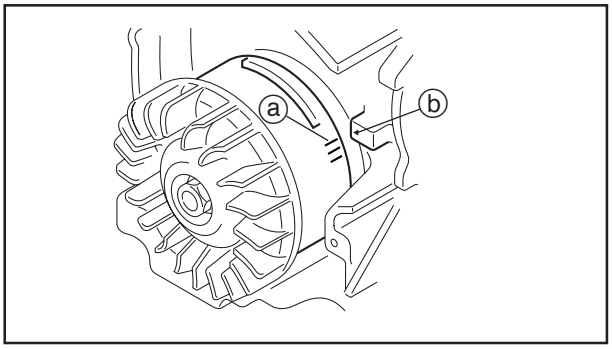
	Timing chain tensioner bolt **10 Nm (1.0 m • kg, 7.2 ft • lb)**

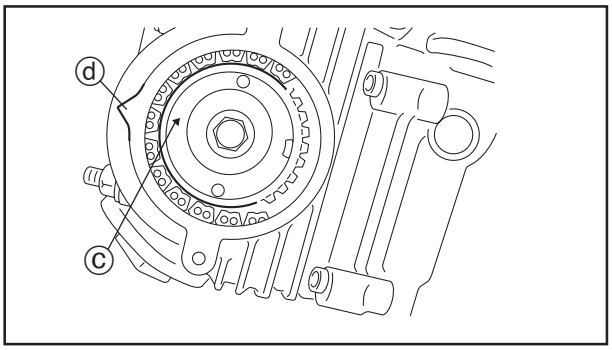
d. Install the springs ② and cap bolt ①.

	Cap bolt **8 Nm (0.8 m • kg, 5.8 ft • lb)**

****

7. Turn:
   - crankshaft
     (several turns counterclockwise)





8. Check:
   - "I" mark ⓐ
     Align the "I" mark on the C.D.I. magneto rotor with the stationary pointer ⓑ on the crankcase cover.
   - "I" mark ⓒ
     Align the "I" mark on the camshaft sprocket with the stationary pointer ⓓ on the cylinder head.
     Out of alignment → Correct.
     Refer to the installation steps above.

9. Tighten:
   - camshaft sprocket bolt

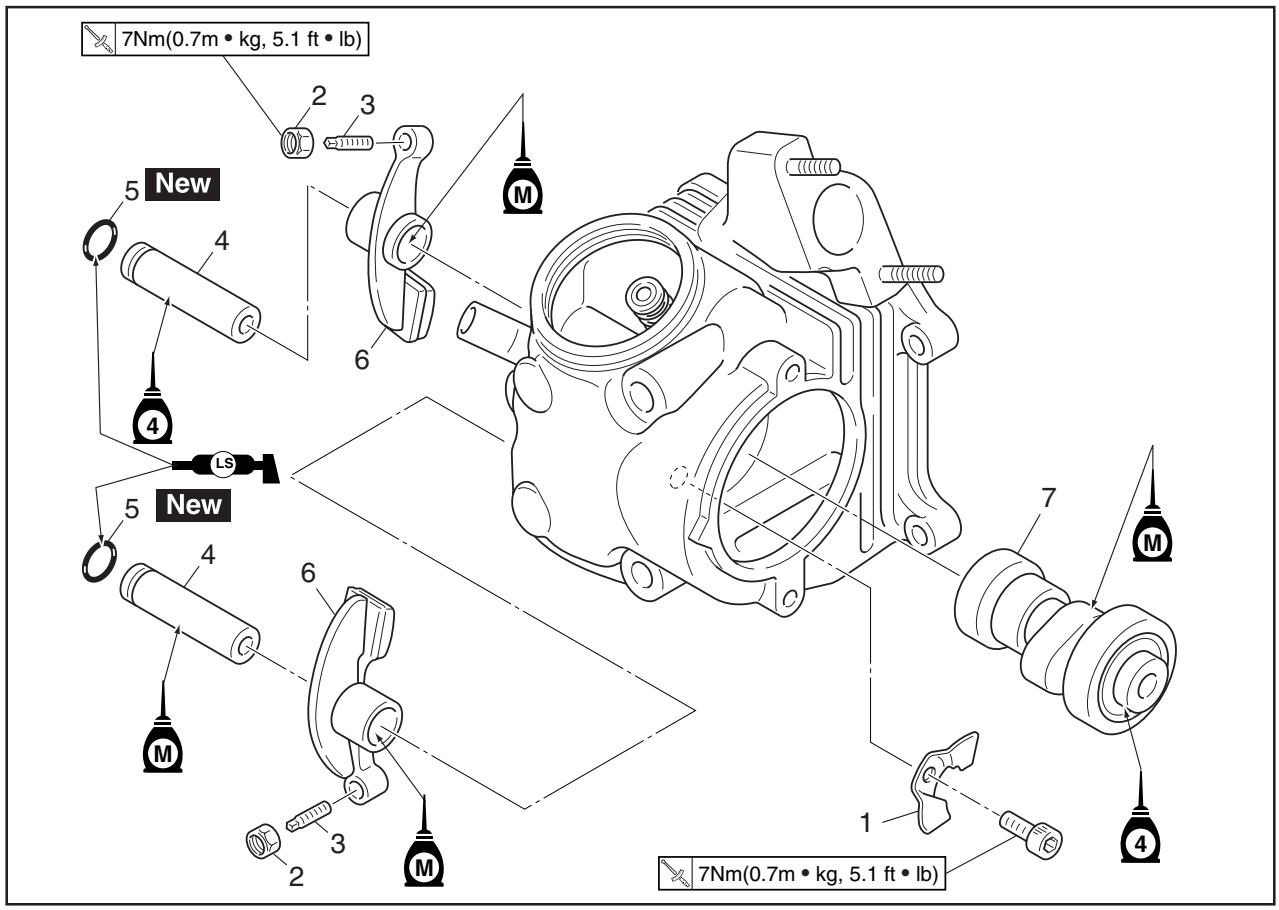
30 Nm (3.0 m • kg, 21.7 ft • lb)

CAUTION:

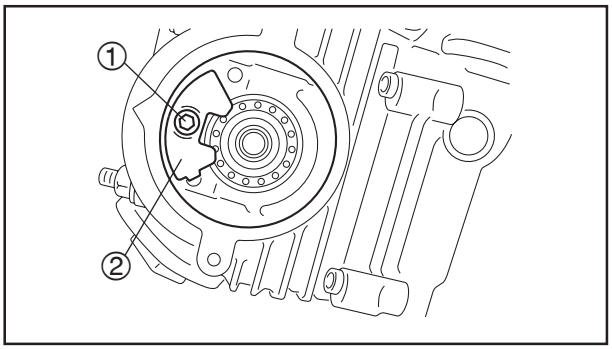
Be sure to tighten the camshaft sprocket bolts to the specified torque to avoid the possibility of the bolts coming loose and damaging the engine.

10. Measure:
    - valve clearance
      Out of specification → Adjust.
      Refer to "ADJUSTING THE VALVE CLEARANCE" in chapter 3.

THE ROCKER ARMS AND CAMSHAFT

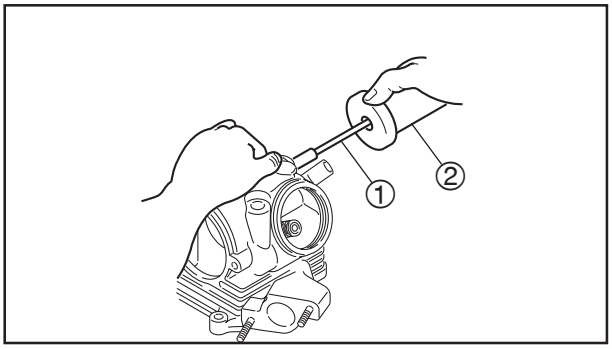


Order	Job/Part	Q'ty	Remarks
	Removing the rocker arms and camshaft		Remove the parts in the order listed.
	Cylinder head		Refer to "CYLINDER HEAD".
1	Stopper plate	1	
2	Locknut	2	
3	Adjusting screw	2	
4	Rocker arm shaft	2	Refer to " REMOVING THE ROCKER ARMS AND CAMSHAFT" and "INSTALLING THE ROCKER ARMS AND CAMSHAFT.
5	O-ring	2	
6	Rocker arm	2	
7	Camshaft	1	Refer to"INSTALLING THE CAMSHAFT AND ROCKER ARMS" For installation, reverse the removal procedure.



EAS00202
REMOVING THE ROCKER ARMS AND CAMSHAFT

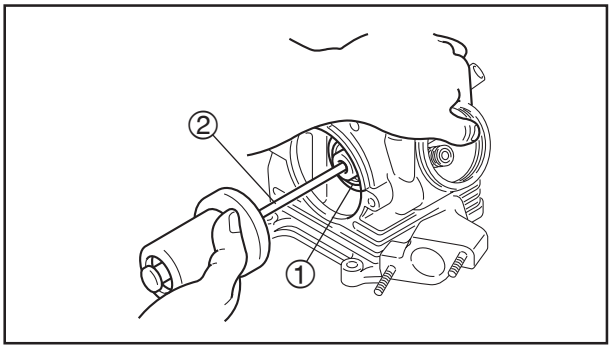
1. Remove:
   - locknut ①
   - stopper plate ②



2. Remove:
   - intake rocker arm shaft
   - exhaust rocker arm shaft
   - intake rocker arm
   - exhaust rocker arm

NOTE:
Remove the rocker arm shafts with the slide hammer bolt ① and weight② .

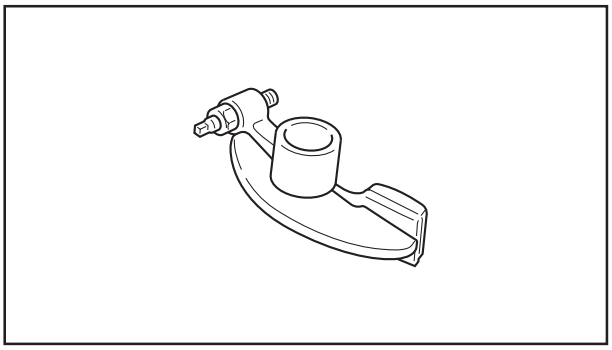
Slide hammer bolt
90890-01083 (YU-01083-1)
90890-01085 (YU-01083-2)
Weight
90890-01084 (YU-01083-3)



3. Remove:
   - camshaft①

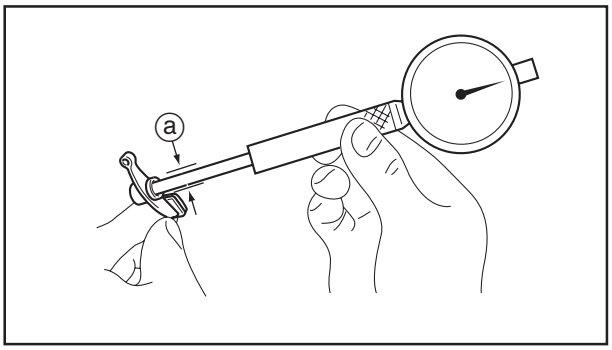
Screw 8-mm bolt ② into the threaded end of the camshaft and then pull out the camshaft.

Slide hammer bolt
90890-01085 (YU-01083-2)
Weight
90890-01084 (YU-01083-3)



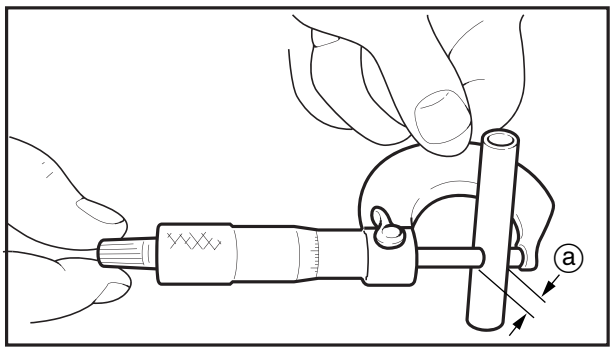
EAS00206
CHECKING THE ROCKER ARMS AND ROCKER ARM SHAFTS
The following procedure applies to all of the rocker arms and rocker arm shafts.

1. Check:
   - rocker arm
     Damage/wear → Replace.
2. Check:
   - rocker arm shaft
     Blue discoloration/excessive wear/pitting/scratches → Replace or check the lubrication system.
3. Check:
   - camshaft lobe
     Excessive wear → Replace the camshaft.



4. Measure:
   - rocker arm inside diameter ⓐ
     Out of specification → Replace.

Rocker arm inside diameter
10 ~ 10.015 mm(0.393~0.394 in)



5. Measure:
   - rocker arm shaft outside diameter ⓐ

     Out of specification → Replace.

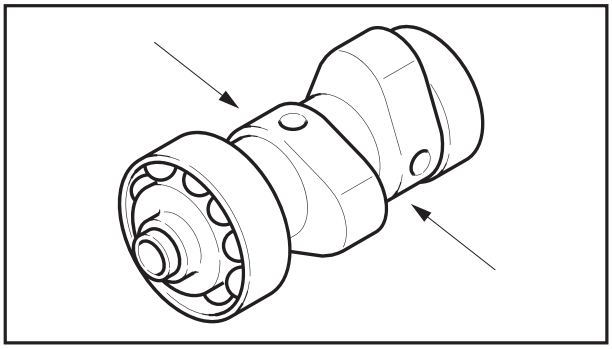
Rocker arm shaft outside diameter
9.981 ~ 9.991 mm(0.392~0.393 in)

6. Calculate:
   - rocker-arm-to-rocker-arm-shaft clearance

NOTE:
Calculate the clearance by subtracting the rocker arm shaft outside diameter from the rocker arm inside diameter.

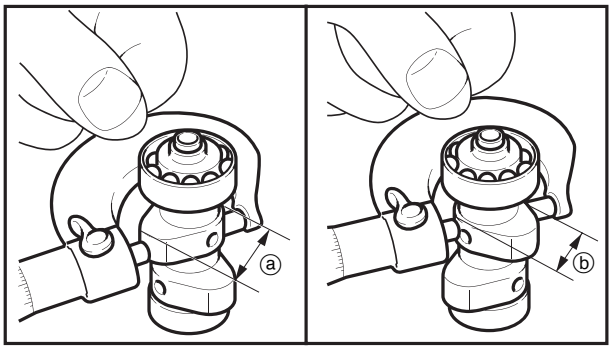
Above 0.034 mm(0.001 in) → Replace the defective part(s).

Rocker-arm-to-rocker-arm-shaft clearance
0.009 ~ 0.034 mm(0.0004~0.001 in)



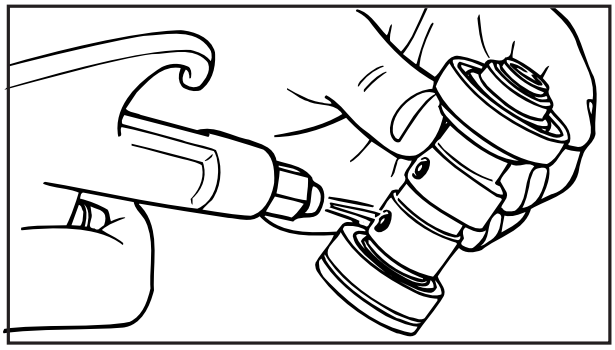
EAS00205
CHECKING THE CAMSHAFT

1. Check:
   - camshaft bushings
     Damage/wear → Replace.
2. Check:
   - camshaft lobes
     Blue discoloration/pitting/scratches → Replace the camshaft.



3. Measure:
   - camshaft lobe dimensions ⓐ and ⓑ
     Out of specification → Replace the camshaft.

Camshaft lobe dimension limit
Intake
ⓐ 26.153~26.253 mm (1.030 ~ 1.034 in)
<Limit>:26.053mm
ⓑ 21.015~21.115 mm (0.827 ~ 0.831 in)
<Limit>:20.915mm
Exhaust
ⓐ 26.153~26.253 mm (1.030 ~ 1.034 in)
<Limit>:26.053mm
ⓑ 21.056~21.156 mm (0.829 ~ 0.833 in)
<Limit>:20.956mm

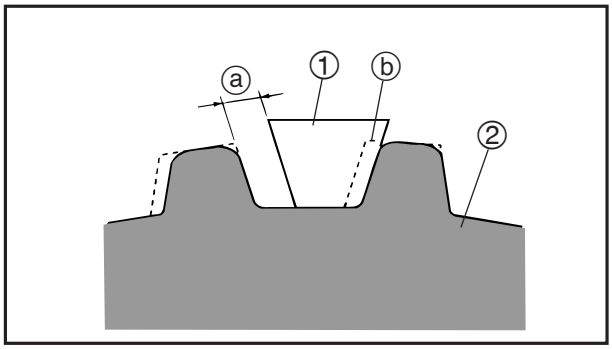


4. Check:
   - camshaft oil passage
     Obstruction → Blow out with compressed air.

EAS00208
CHECKING THE TIMING CHAIN, CAMSHAFT SPROCKETS, AND TIMING CHAIN GUIDES

The following procedure applies to all of the camshaft sprockets and timing chain guides.

1. Check:
   - timing chain ①
     Damage/stiffness → Replace the timing chain and camshaft sprockets as a set.



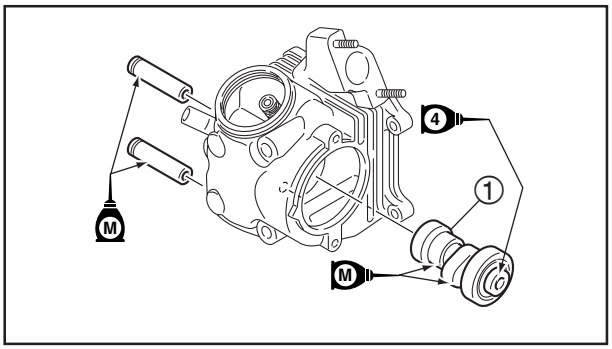
2. Check:
   - camshaft sprocket
     More than 1/4 tooth wear ⓐ → Replace the camshaft sprockets and the timing chain as a set.

ⓐ 1/4 tooth
ⓑ Correct
① Timing chain roller
② Camshaft sprocket

3. Check:
   - timing chain guide (exhaust side)
   - timing chain guide (intake side)
   - timing chain guide (top side)
     Damage/wear → Replace the defective part(s).

EAS00210
CHECKING THE TIMING CHAIN TENSIONER

1. Check:
   - timing chain tensioner
     Cracks/damage → Replace.
2. Check:
   - one-way cam operation
     Rough movement → Replace the timing chain tensioner housing.
3. Check:
   - cap bolt
   - copper washer O-ring **New**
   - spring
   - one-way cam
   - gasket **New**
   - timing chain tensioner rod
     Damage/wear → Replace the defective part(s).



EAS00220

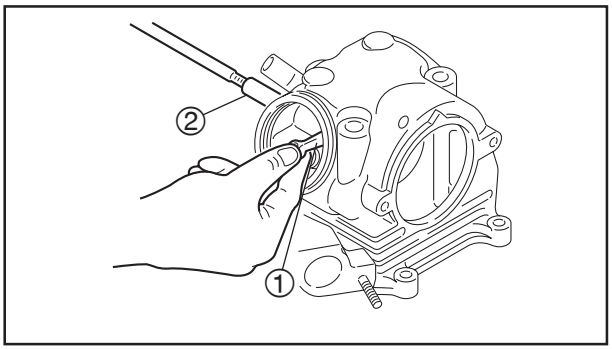
INSTALLING THE CAMSHAFT AND ROCKER ARMS

1. Lubricate:
   - camshaft ①

	Recommended lubricant **Camshaft** **Molybdenum disulfide oil** **Camshaft bearing** **Engine oil**

2. Lubricate:
   - rocker arm shafts

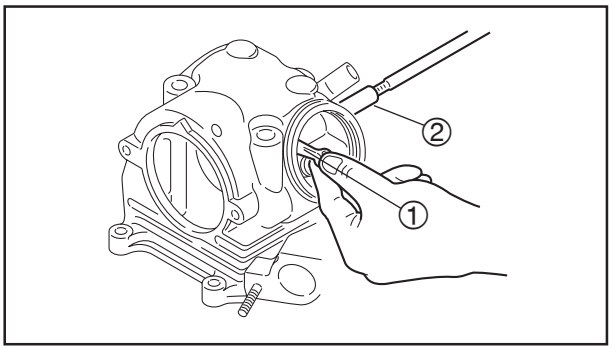
	Recommended lubricant **Molybdenum disulfide oil**



3. Install:
   - exhaust rocker arm ①
   - exhaust rocker arm shaft ②

NOTE:

Make sure the exhaust rocker arm shaft is completely pushed into the cylinder head.



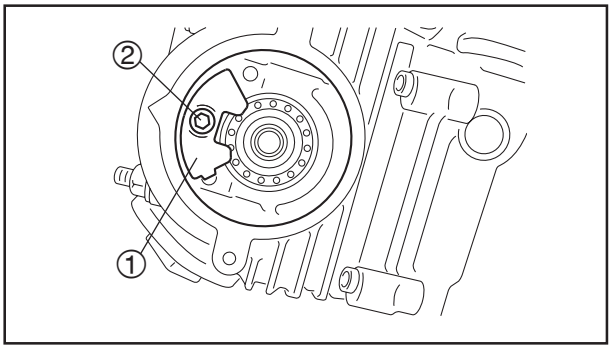
4. Install:
   - intake rocker arm ①
   - intake rocker arm shaft ②

NOTE:

Make sure the intake rocker arm shaft is completely pushed into the cylinder head.

CAUTION:

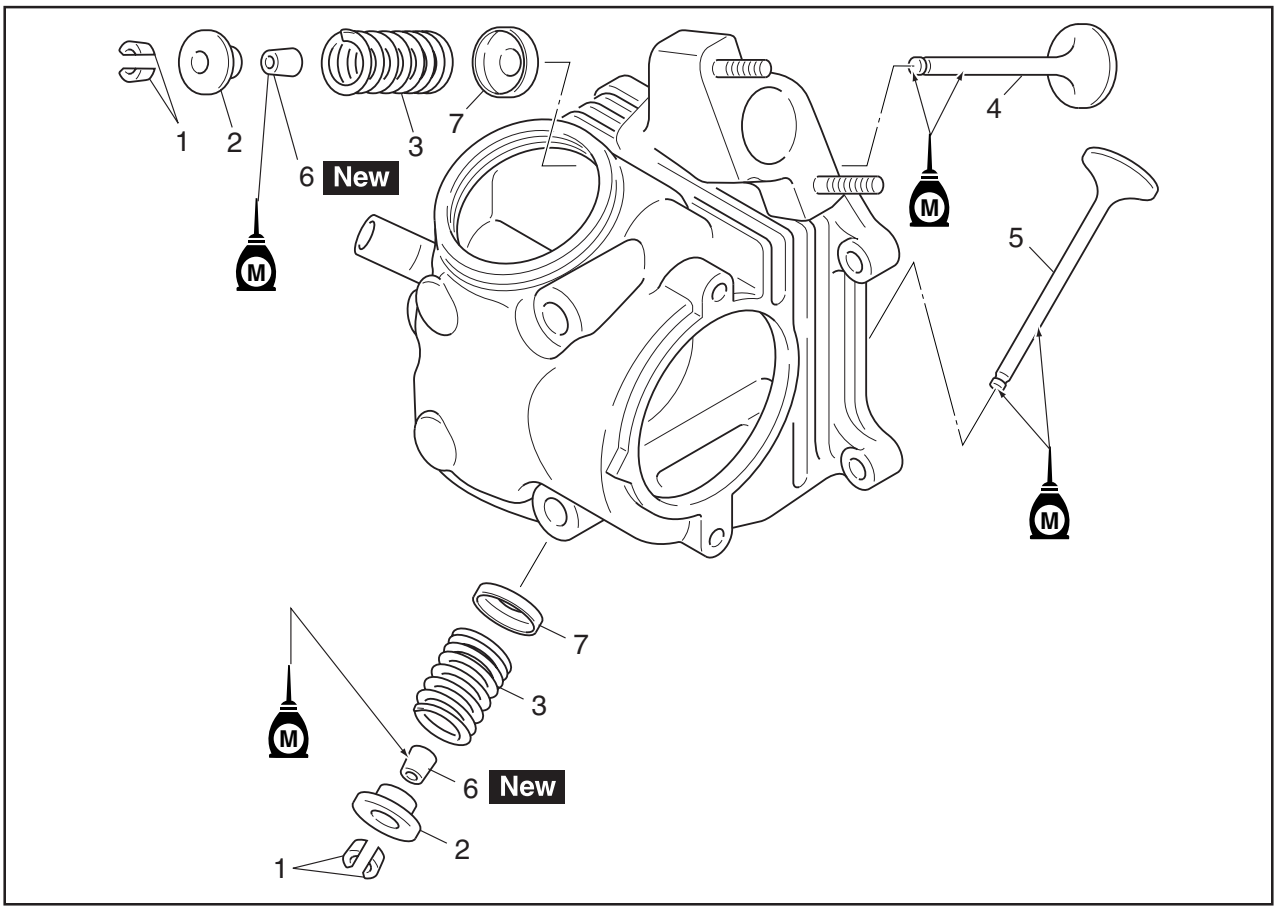
Make sure the threaded part of the rocker arm shaft faces out.



5. Install:
   - stopper plate ①
   - locknut ②

	7 Nm (0.7 m • kg, 5.1 ft • lb)

EAS00236
VALVES AND VALVE SPRINGS



Order	Job/Part	Q'ty	Remarks
	Removing the valves and valve springs		Remove the parts in the order listed.
	Cylinder head		Refer to "CYLINDER HEAD".
	Rocker arm and rocker arm shaft		Refer to " ROCKER ARMS AND ROCKER ARMS SHAFTS".
1	Valve cotter	4	
2	Valve spring retainer	2	
3	Valve spring	2	
4	Valve (intake)	1	Refer to " INSTALLING THE VALVES AND VALVE SPRINGS ".
5	Valve (exhaust)	1	
6	Valve stem seal	2	
7	Valve stem seat	2	
			For installation, reverse the removal procedure.

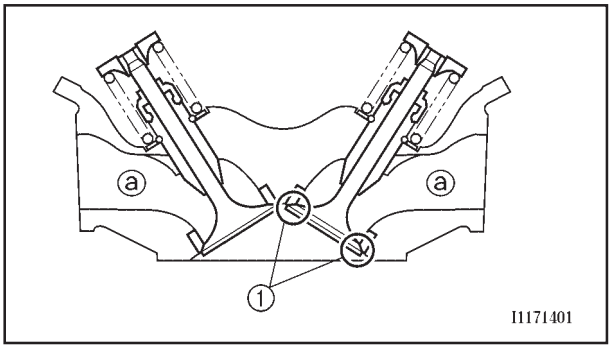
EAS00237

REMOVING THE VALVES

The following procedure applies to all of the valves and related components.

NOTE:

Before removing the internal parts of the cylinder head (e.g., valves, valve springs, valve seats), make sure the valves properly seal.



1. Check:
   - valve sealing

     Leakage at the valve seat → Check the valve face, valve seat, and valve seat width.

     Refer to "CHECKING THE VALVE SEATS".

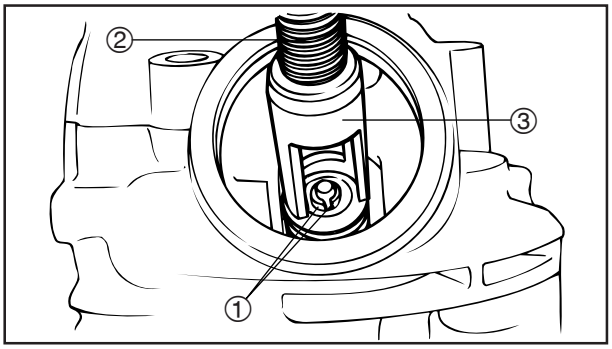
****

a. Pour a clean solvent ⓐ into the intake and exhaust ports.
b. Check that the valves properly seal.

NOTE:

There should be no leakage at the valve seat ①.

****

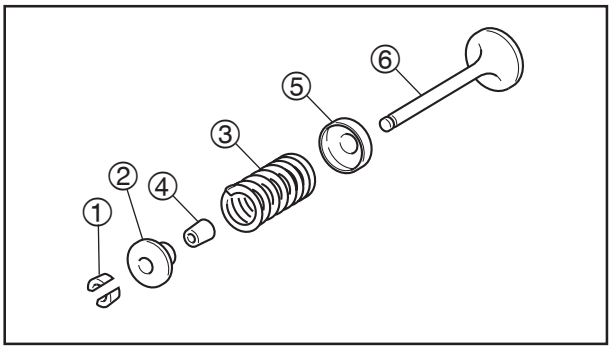


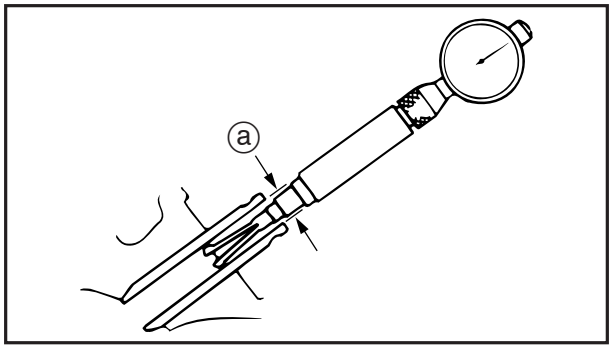
2. Remove:
   - valve cotters ①

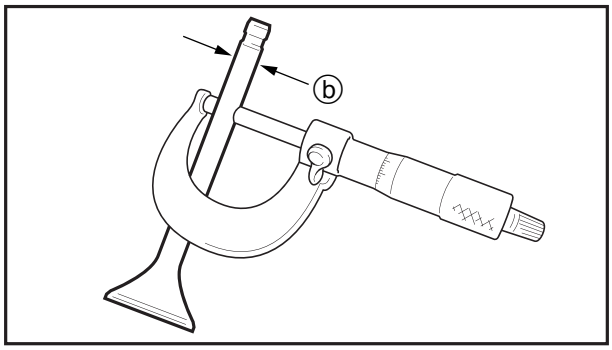
NOTE:

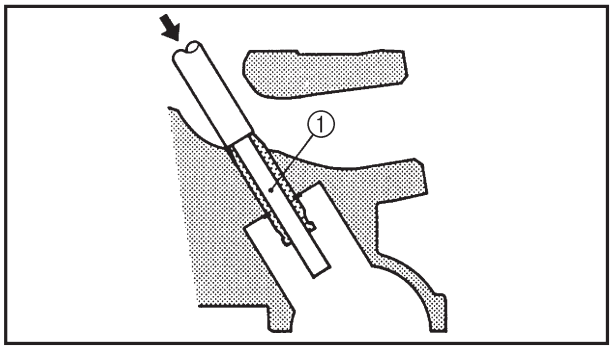
Remove the valve cotters by compressing the valve spring with the valve spring compressor ② and the valve spring compressor attachment ③.

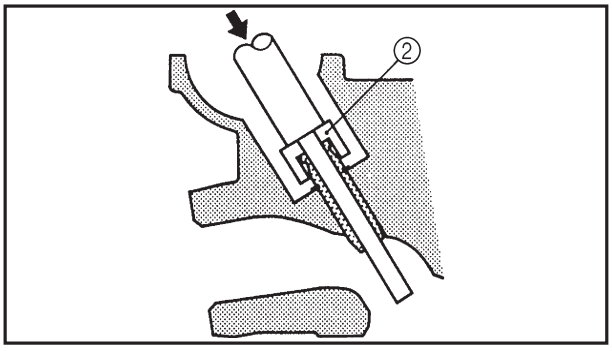
Valve spring compressor
90890-04109 (YM-04109)
Valve spring compressor attachment
90890-04108 (YM-04108)











3. Remove:
   - valve cotter ①
   - valve spring retainer ②
   - valve spring ③
   - valve stem seal ④
   - lower spring seat ⑤
   - valve ⑥

NOTE:
Identify the position of each part very carefully so that it can be reinstalled in its original place.

EAS00239

CHECKING THE VALVES AND VALVE GUIDES

The following procedure applies to all of the valves and valve guides.

1. Measure:
   - valve-stem-to-valve-guide clearance

Valve-stem-to-valve-guide clearance = Valve guide inside diameter ⓐ - Valve stem diameter ⓑ

Out of specification → Replace the valve guide.

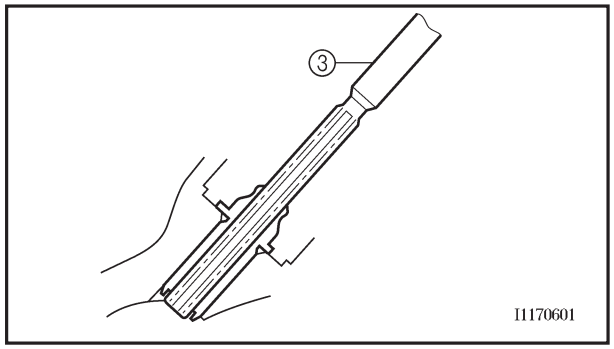
Valve-stem-to-valve-guide clearance
Intake
0.010 ~ 0.037 mm(0.0004~0.0015 in)
<Limit>: 0.08 mm(0.003 in)
Exhaust
0.025 ~ 0.057 mm(0.001~0.002 in)
<Limit>: 0.10 mm(0.004 in)

2. Replace:
   - valve guide

NOTE:
To ease valve guide removal and installation, and to maintain the correct fit, heat the cylinder head to 100°C (212°F) in an oven.

****

a. Remove the valve guide with the valve guide remover ①.
b. Install the new valve guide with the valve guide installer ② and valve guide remover ①.
c. After installing the valve guide, bore the valve guide with the valve guide reamer ③ to obtain the proper valve-stem-to-valve-guide clearance.

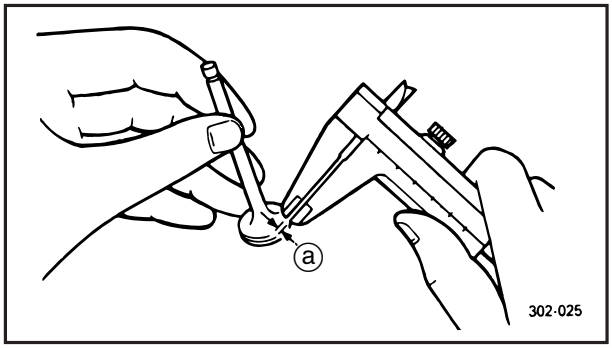


NOTE:
After replacing the valve guide, reface the valve seat.

Valve guide remover (4.5 mm)
90890-04116 (YM-04116)
Valve guide installer (4.5 mm)
90890-04117 (YM-04117)
Valve guide reamer (5.0 mm)
90890-04099

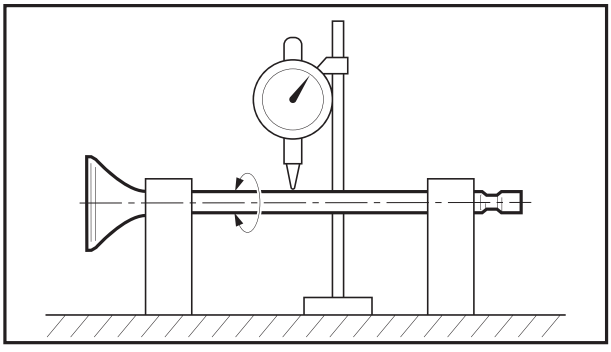
****

3. Eliminate:
   - carbon deposits
     (from the valve face and valve seat)
4. Check:
   - valve face
     Pitting/wear → Grind the valve face.
   - valve stem end
     Mushroom shape or diameter larger than the body of the valve stem → Replace the valve.



5. Measure:
   - valve margin thickness ⓐ
     Out of specification → Replace the valve.

Valve margin thickness
0.85~1.15 mm(0.033~0.045 in)



6. Measure:
   - valve stem runout
     Out of specification → Replace the valve.

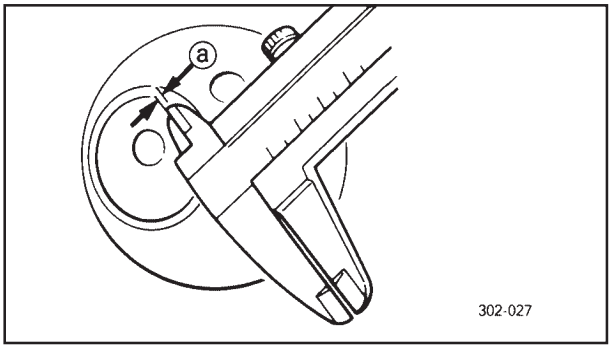
NOTE:
- When installing a new valve, always replace the valve guide.
- If the valve is removed or replaced, always replace the oil seal.

Valve stem runout
0.01 mm(0.0004 in)

EAS00240
CHECKING THE VALVE SEATS

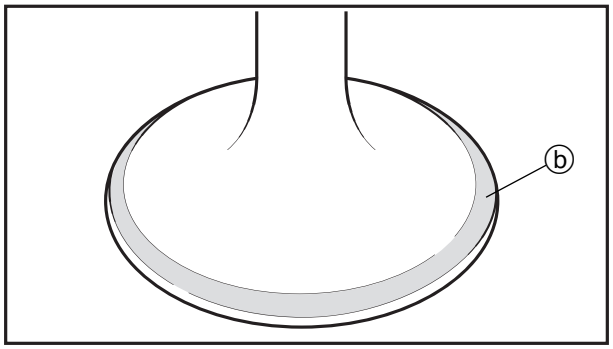
The following procedure applies to all of the valves and valve seats.

1. Eliminate:
   - carbon deposits
     (from the valve face and valve seat)
2. Check:
   - valve seat
     Pitting/wear → Replace the cylinder head.



3. Measure:
   - valve seat width ⓐ
     Out of specification → Replace the cylinder head.

Valve seat width
Intake: 0.9 ~ 1.1 mm(0.035 ~ 0.043 in)
<Limit>: 1.6 mm(0.063 in)
Exhaust: 0.9 ~1.1 mm(0.035~0.043 in)
<Limit>: 1.6 mm(0.063 in)

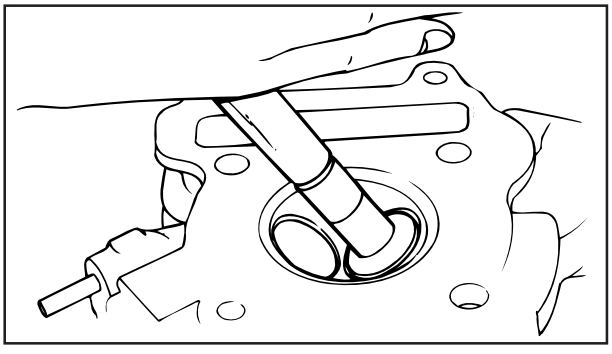


****

a. Apply Mechanic's blueing dye (Dykem) ⓑ onto the valve face.
b. Install the valve into the cylinder head.
c. Press the valve through the valve guide and onto the valve seat to make a clear impression.
d. Measure the valve seat width.

NOTE:
Where the valve seat and valve face contacted one another, the blueing will have been removed.

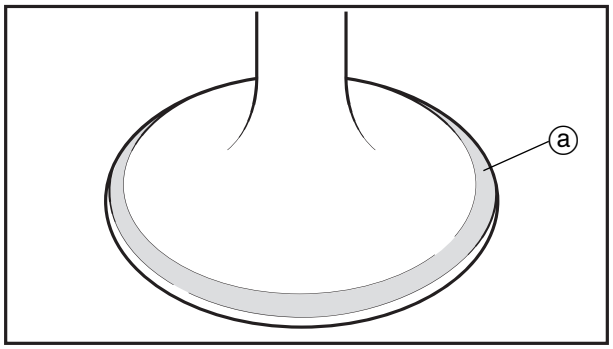
****

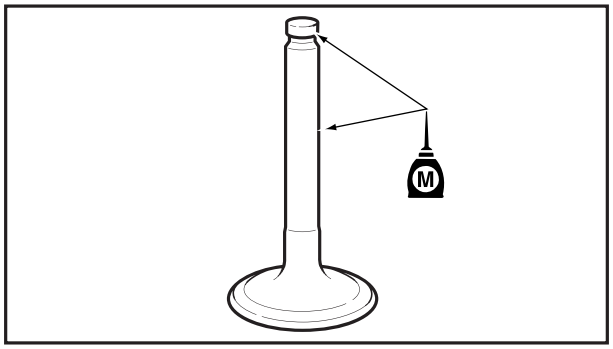


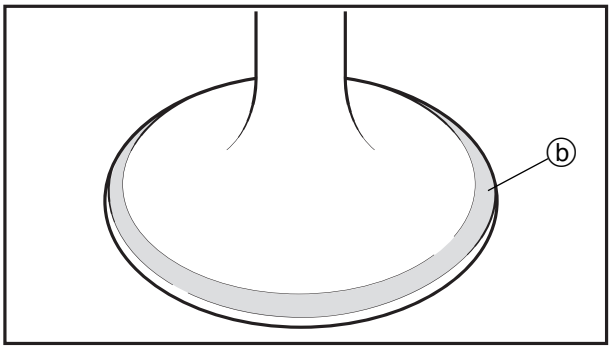
4. Lap:
   - valve face
   - valve seat

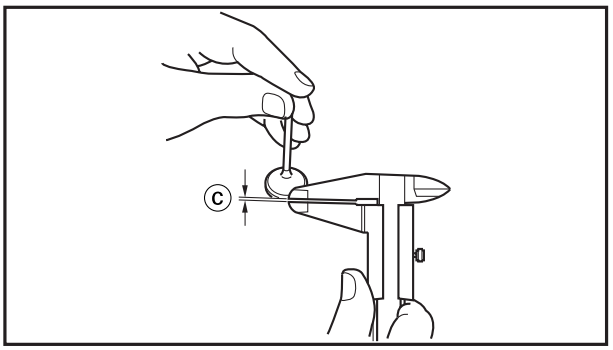
NOTE:
After replacing the cylinder head or replacing the valve and valve guide, the valve seat and valve face should be lapped.

****









a. Apply a coarse lapping compound ⓐ to the valve face.

CAUTION:

Do not let the lapping compound enter the gap between the valve stem and the valve guide.

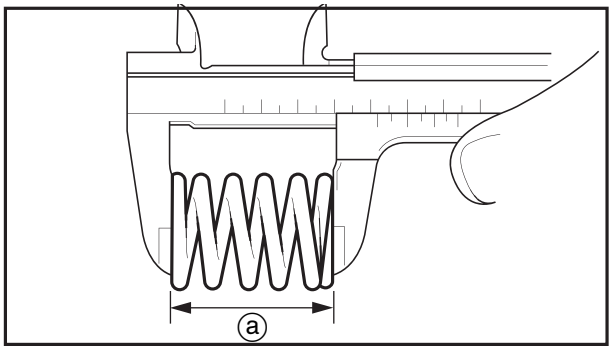
b. Apply molybdenum disulfide oil onto the valve stem.
c. Install the valve into the cylinder head.
d. Turn the valve until the valve face and valve seat are evenly polished, then clean off all of the lapping compound.

NOTE:

For the best lapping results, lightly tap the valve seat while rotating the valve back and forth between your hands.

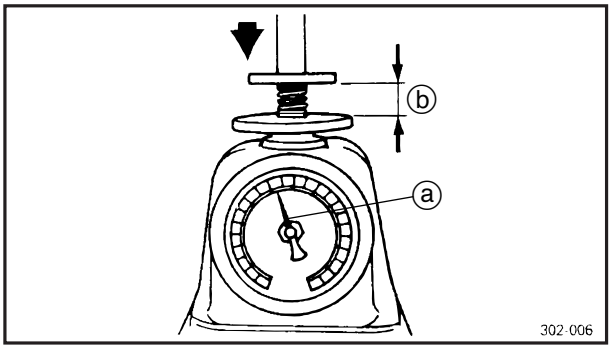
e. Apply a fine lapping compound to the valve face and repeat the above steps.
f. After every lapping procedure, be sure to clean off all of the lapping compound from the valve face and valve seat.
g. Apply Mechanic's blueing dye (Dykem) ⓑ onto the valve face.
h. Install the valve into the cylinder head.
i. Press the valve through the valve guide and onto the valve seat to make a clear impression.
j. Measure the valve seat width ⓒ again. If the valve seat width is out of specification, reface and lap the valve seat.

****



EAS00241
CHECKING THE VALVE SPRINGS
The following procedure applies to all of the valve springs.
1. Measure:
   - valve spring free length ⓐ
     Out of specification → Replace the valve spring.

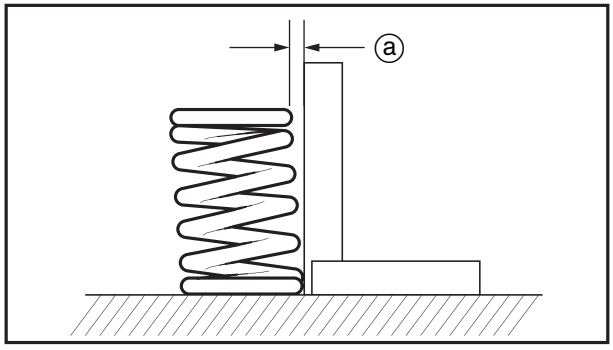
Valve spring free length
37.30 mm(1.469 in)
<Limit>: 35.40 mm(1.394 in)



2. Measure:
   - compressed valve spring force ⓐ
     Out of specification → Replace the valve spring.

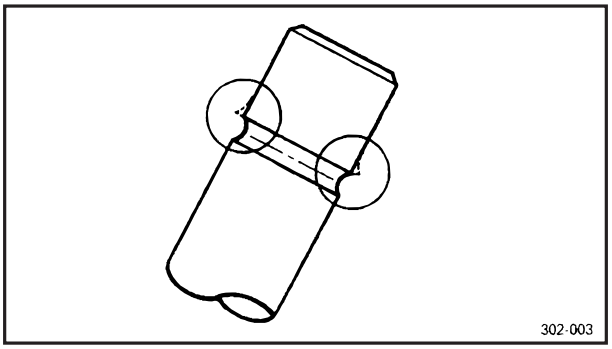
ⓑ Installed length

Compressed valve spring force (installed)
147±11N(15.0±1.1 kg) at 25.77 mm (33.075 ± 2.426 lb at 1.015 in)



3. Measure:
   - valve spring tilt ⓐ
     Out of specification → Replace the valve spring.

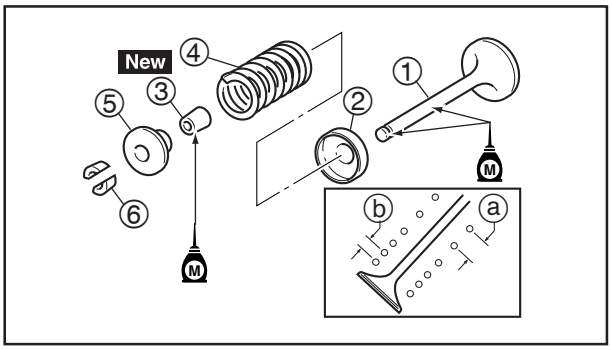
Spring tilt limit
1.6 mm (2.5°)(0.063 in)



EAS00245
INSTALLING THE VALVES
The following procedure applies to all of the valves and related components.

1. Deburr:
   - valve stem end
     (with an oil stone)
2. Lubricate:
   - valve stem
   - valve stem seal
     (with the recommended lubricant)

	Recommended lubricant **Molybdenum disulfide oil**

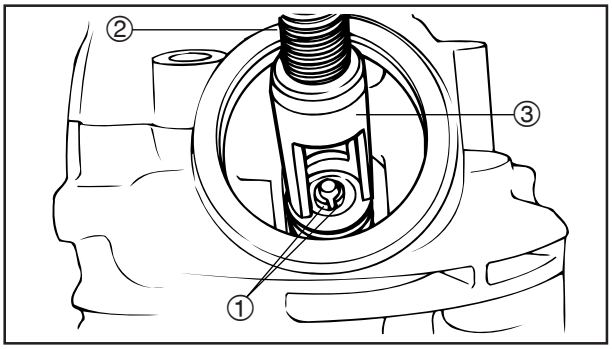


3. Install:
   - valve ①
   - valve spring seat ②
   - valve stem seal ③ **New**
   - valve spring ④
   - valve spring retainer ⑤
   - valve cotter ⑥

   (into the cylinder head)

NOTE:
Install the valve spring with the larger pitch ⓐ facing up.

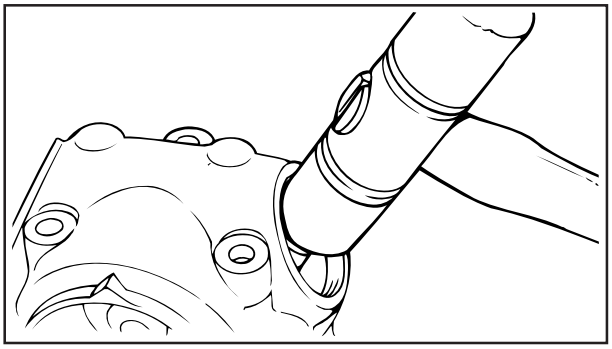
ⓑ Smaller pitch



4. Install:
   - valve cotters ①

NOTE:
Install the valve cotters by compressing the valve spring with the valve spring compressor ② and the valve spring compressor attachment ③.

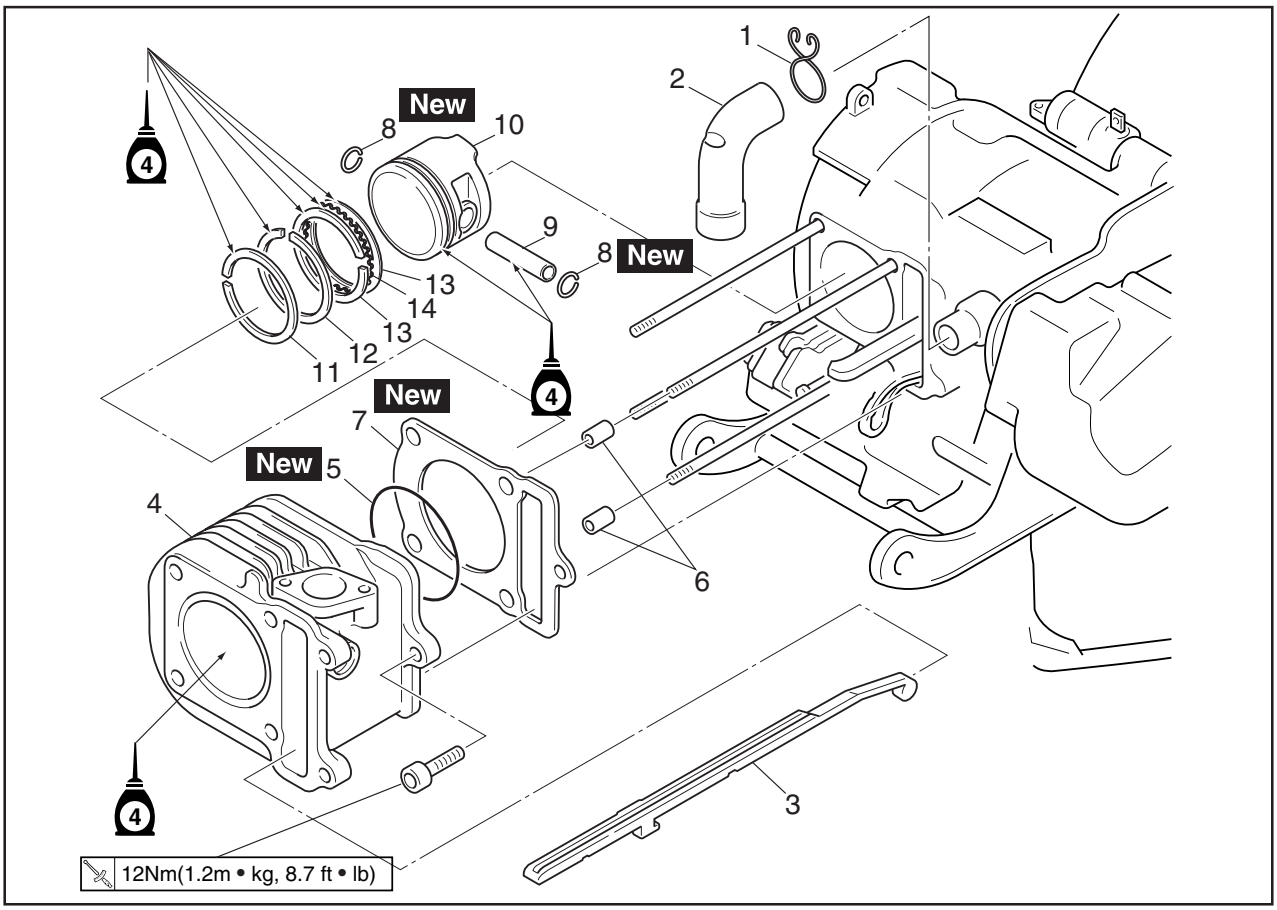
Valve spring compressor
90890-04109 (YM-04109)
Valve spring compressor attachment
90890-04108 (YM-04108)



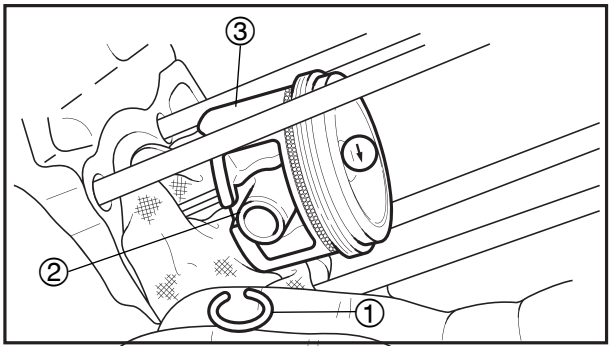
5. To secure the valve cotters onto the valve stem, lightly tap the valve tip with a soft-face hammer.

CAUTION:
Hitting the valve tip with excessive force could damage the valve.

EAS00251
CYLINDER AND PISTON



Order	Job/Part	Q'ty	Remarks
	Removing the cylinder and piston		Remove the parts in the order listed.
	Cylinder head		Refer to "CYLINDER HEAD".
1	Clamp	1	
2	Pipe	1	
3	Timing chain guide (exhaust side)	1	
4	Cylinder	1	
5	O-ring	1	
6	Dowel pin	2	
7	Cylinder gasket	1	Refer to " INSTALLING THE PISTON AND CYLINDER"
8	Piston pin clip	2	
9	Piston pin	1	Refer to " REMOVING THE CYLINDER AND PISTON"
10	Piston	1	
11	Top ring	1	Refer to " INSTALLING THE PISTON AND CYLINDER"
12	2nd ring	1	
13	Oil ring	2	
14	Expander	1	
			For installation, reverse the removal procedure.



EAS00253

REMOVING THE CYLINDER AND PISTON

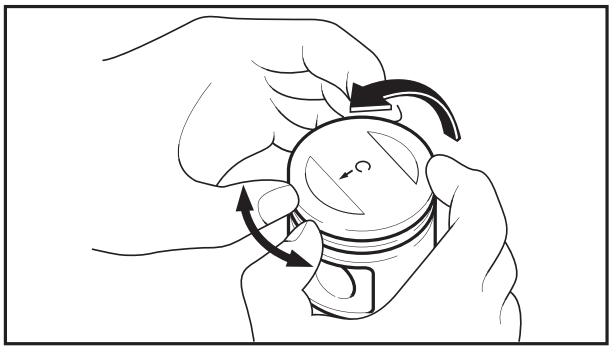
1. Remove:
   - piston pin clip ①
   - piston pin ②
   - piston ③

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.
- Before removing the piston pin, deburr the piston pin clip's groove and the piston's pin bore area.



2. Remove:
   - top ring
   - 2nd ring
   - oil ring

NOTE:

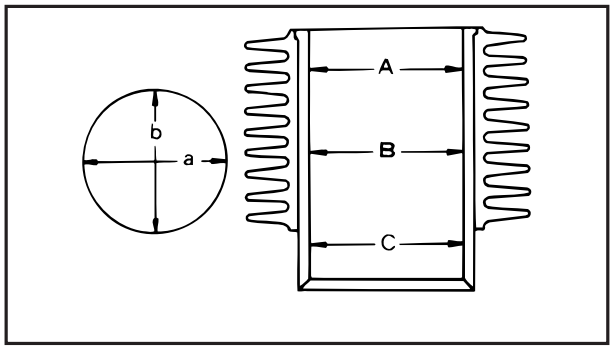
When removing a piston ring, open the end gap with your fingers and lift the other side of the ring over the piston crown.

EAS00261*

CHECKING THE CYLINDER AND PISTON

1. Check:
   - piston wall
   - cylinder wall

   Vertical scratches → Replace the cylinder, and the piston and piston rings as a set.
2. Measure:
   - piston-to-cylinder clearance



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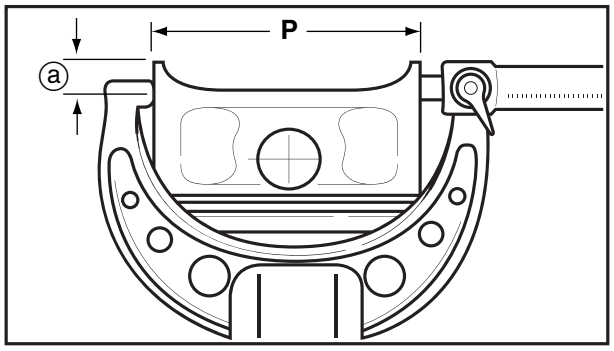
a. Please carry out the following inspections:
   - cylinder

   Measure the piston pin in both of its horizontal axis direction a and its right angle direction b at six positions of A, B, C, etc. with a cylinder gauge.
   Abrasion = Max. value - min. value as measured at those six positions
   When abrasion is beyond limit → Replace it

Standard value of cylinder inner diameter
52.40~52.41mm (2.063~2.064 in)
Service limit of cylinder inner diameter
52.5mm (2.067 in)

b. If out of specification, replace the cylinder, and the piston and piston rings as a set.
c. Measure piston skirt diameter "P" with the micrometer.



ⓐ 3.5 mm(0.138 in) from the bottom edge of the piston

Piston size "P"
51.470 ~ 51.510 mm(2.026~ 2.028 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.

Piston-to-cylinder clearance =
Cylinder bore "C" - Piston skirt diameter "P"

Piston-to-cylinder clearance
0.01 ~ 0.03 mm(0.0004~0.0012 in)
<Limit>: 0.15 mm(0.006 in)

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

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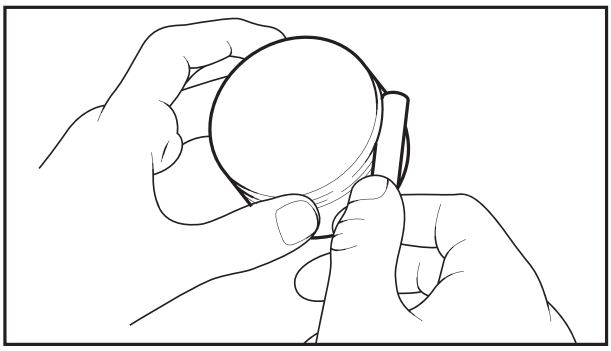
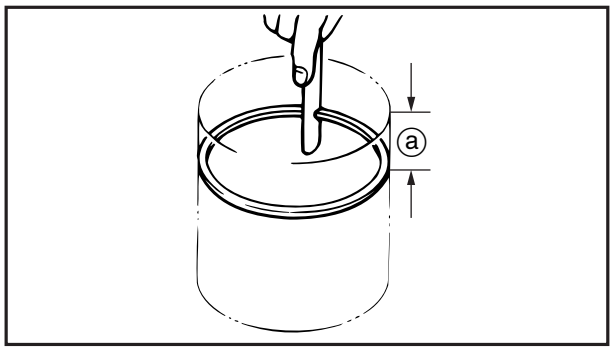


EAS00263
CHECKING THE PISTON RINGS

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
0.02 ~ 0.08 mm(0.0008~0.0031 in)
<Limit>: 0.13mm(0.0051 in)
2nd ring
0.02 ~ 0.06 mm(0.0008~0.0024 in)
<Limit>:0.12 mm(0.0047 in)



2. Install:
   - piston ring
     (into the cylinder)

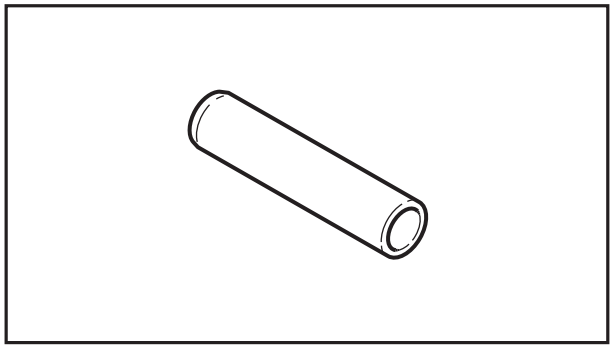
NOTE:
Level the piston ring into the cylinder with the piston crown.

ⓐ 20 mm (0.79 in)

3. Measure:
   - piston ring end gap
     Out of specification → Replace the piston ring.

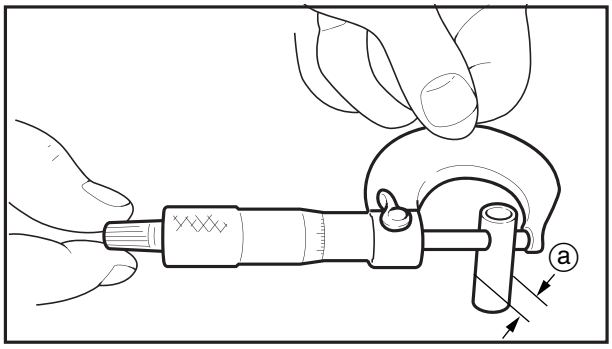
NOTE:
The oil ring expander spacer's end gap cannot be measured. If the oil ring rail's gap is excessive, replace all three piston rings.

Piston ring end gap
Top ring
0.10 ~ 0.20 mm (0.004 ~ 0.008 in)
<Limit>: 0.45 mm (0.018 in)
2nd ring
0.20 ~ 0.30 mm (0.008 ~ 0.012 in)
<Limit>: 0.65 mm (0.026 in)
Oil ring
0.06 ~ 0.15 mm (0.002 ~ 0.006 in)



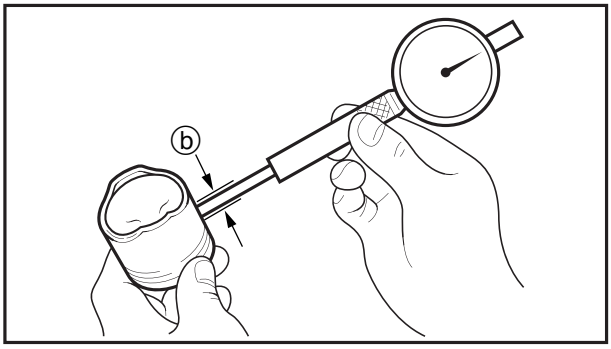
EAS00265
CHECKING THE PISTON PIN

1. Check:
   - piston pin
     Blue discoloration/grooves → Replace the piston pin and then check the lubrication system.



2. Measure:
   - piston pin outside diameter ⓐ
     Out of specification → Replace the piston pin.

Piston pin outside diameter
12.996 ~ 13.000 mm
(0.5117~0.5118 in)
<Limit>:12.976 mm (0.5109 in)



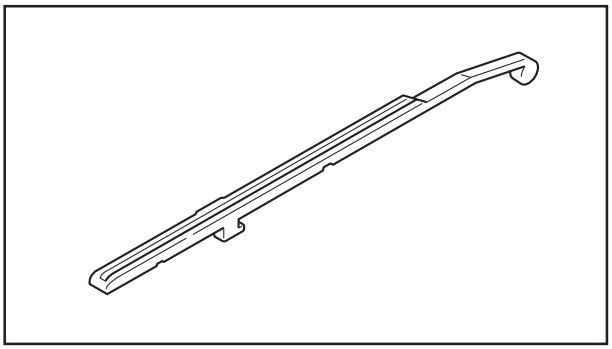
3. Measure:
   - piston pin bore diameter ⓑ
     Out of specification→ Replace the piston.

Piston pin bore diameter
13.002 ~ 13.013 mm
(0.5119 ~ 0.5123 in)
<Limit>:13.043 mm (0.5135 in)

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

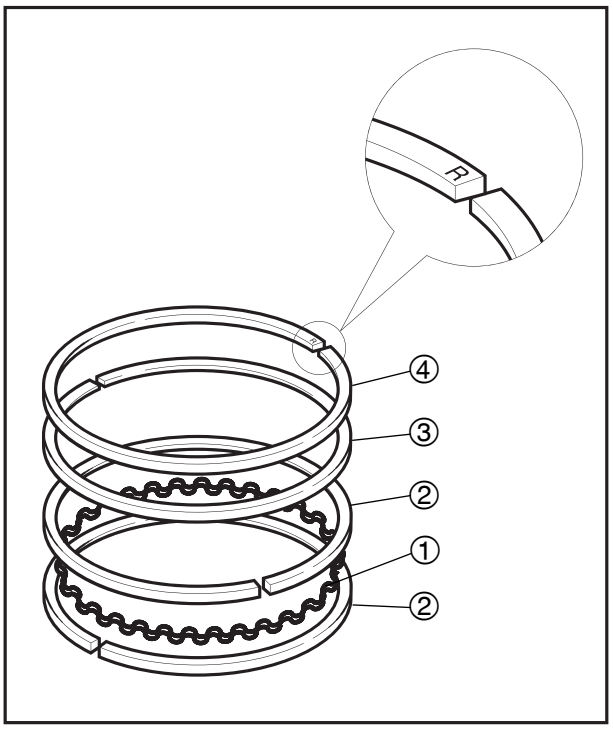
Piston-pin-to-piston-pin-bore clearance =
Piston pin bore diameter ⓑ -
Piston pin outside diameter ⓐ

Piston-pin-to-piston clearance
<Limit>:0.067 mm(0.0026 in)



CHECKING THE TIMING CHAIN GUIDE

1. Check:
   - timing chain guide (exhaust side)
     Damage/wear → Replace



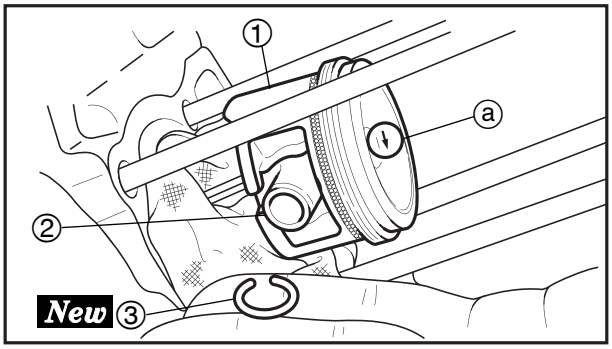
EAS00267

INSTALLING THE PISTON AND CYLINDER

1. Install:
   - oil ring expander ①
   - oil ring rail ②
   - 2nd ring ③
   - top ring ④

NOTE:

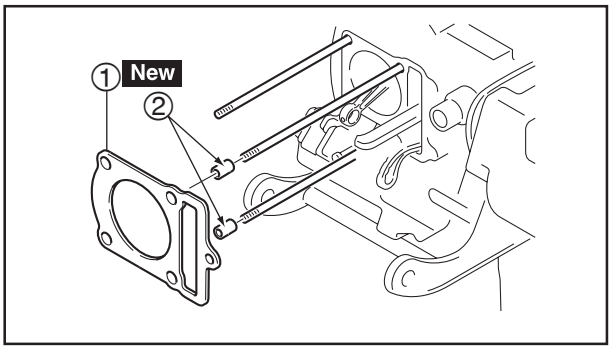
Be sure to install the piston rings so that the manufacturer's marks or numbers face up.



2. Install:
   - piston ①
   - piston pin ②
   - piston pin clip **New** ③

NOTE:

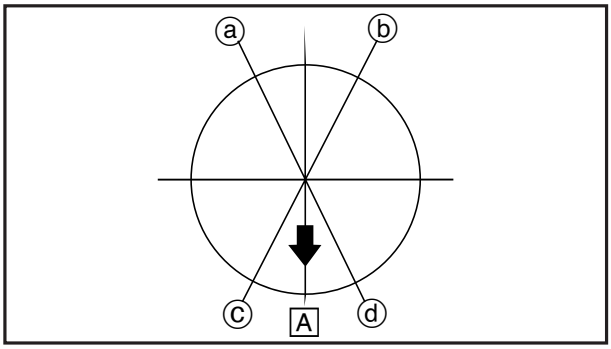
- Apply engineoil the piston pin.
- Make sure the arrow mark ⓐ on the piston points towards the exhaust side of the cylinder.
- Before installing the piston pin clip, cover the crankcase opening with a clean rag to prevent the clip from falling into the crankcase.



3. Install:
   - gasket New ①
   - dowel pins ②

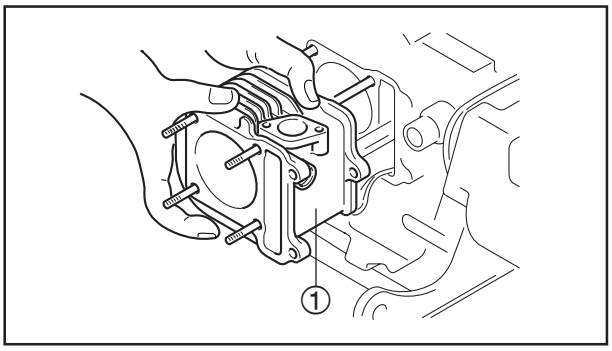
4. Lubricate:
   - piston
   - piston rings
   - cylinder
     (with the recommended lubricant)

	Recommended lubricant **Engine oil**



5. Offset:
   - piston ring end gaps

ⓐ Top ring
ⓑ Lower oil ring rail
ⓒ Upper oil ring rail
ⓓ 2nd ring
Ⓐ Exhaust side



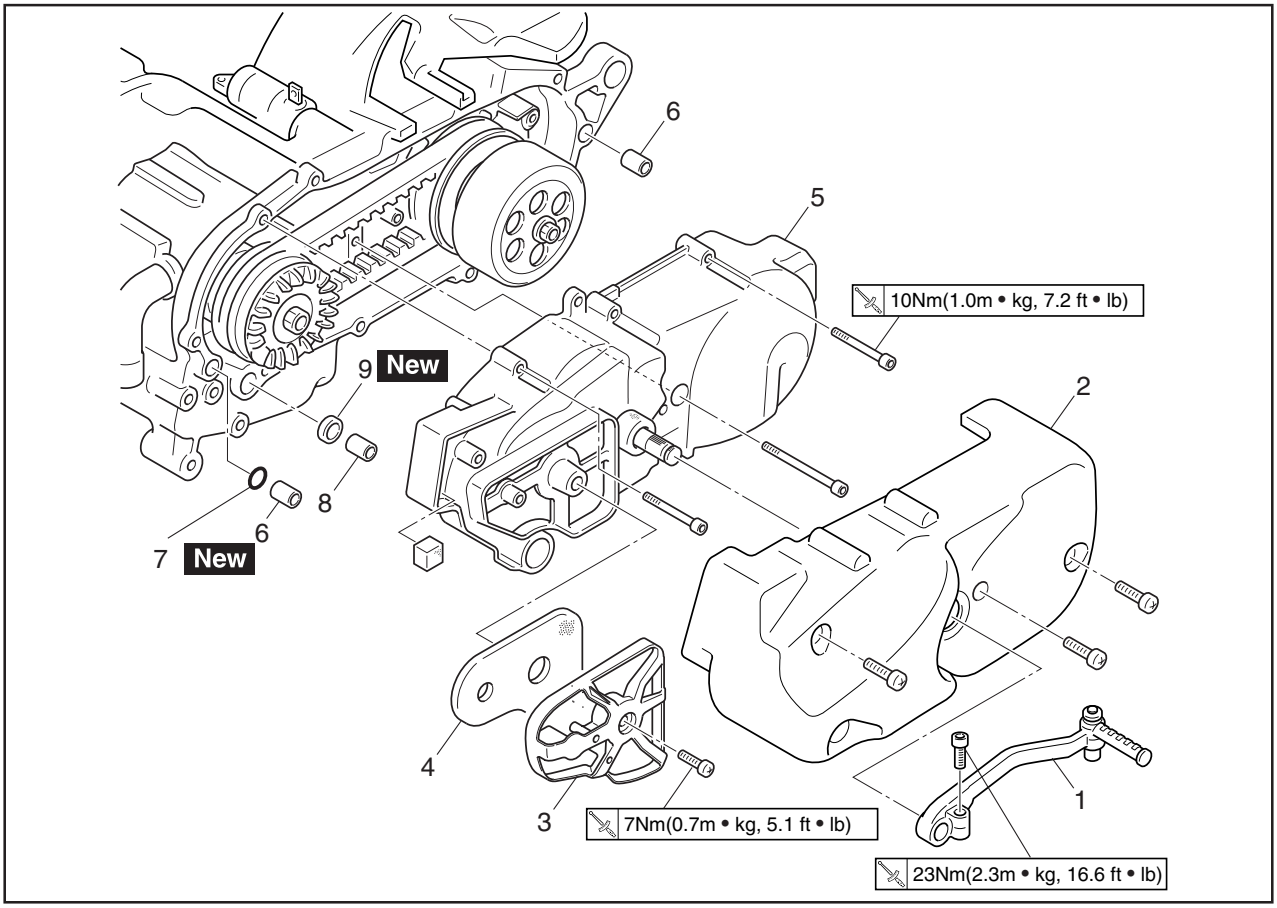
6. Install:
   - cylinder ①

NOTE:
- While compressing the piston rings with one hand, install the cylinder with the other hand.
- Pass the timing chain and timing chain guide (exhaust side) through the timing chain cavity.

EAS00316

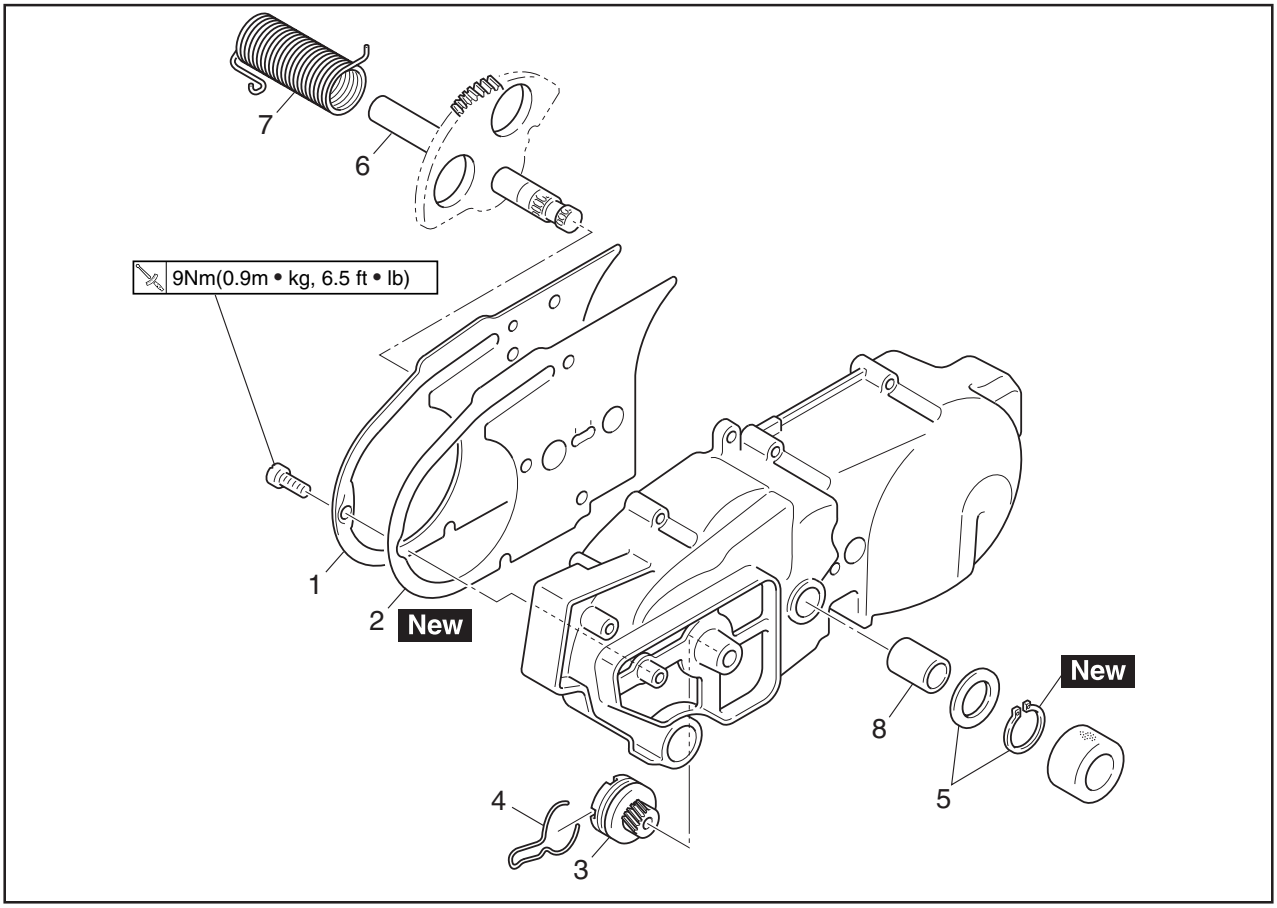
BELT DRIVE

CRANKCASE COVER

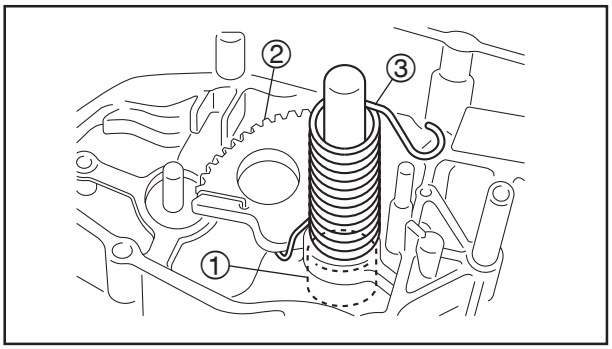


Order	Job/Part	Q'ty	Remarks
	Removing the belt drive		Remove the parts in the order listed.
1	Kickstarter	1	
2	Crankcase cover - 3	1	
3	V-belt case air filter element holder	1	
4	V-belt case filter element	1	
5	Crankcase cover - 1	1	
6	Dowel pin	1	
7	O-ring	1	
8	Dowel pin	1	
9	O-ring	1	
			For installation, reverse the removal procedure.

EAS00338
KICKSTARTER

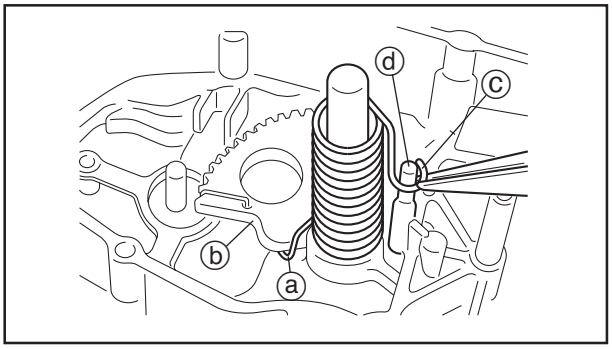


Order	Job/Part	Q'ty	Remarks
	Removing the kickstarter		Remove the parts in the order listed.
	Crankcase cover		Refer to "CRANKCASE COVER ".
1	Plate (V-belt guide)	1	
2	Gasket	1	
3	Kick pinion gear	1	
4	Kick pinion gear clip	1	Refer to "INSTALLING THE KICKSTARTER".
5	Circlip / Plate washer	1/1	
6	Kick shaft assembly	1	
7	Torsion spring	1	
8	Solid bush	1	
			For installation, reverse the removal procedure.



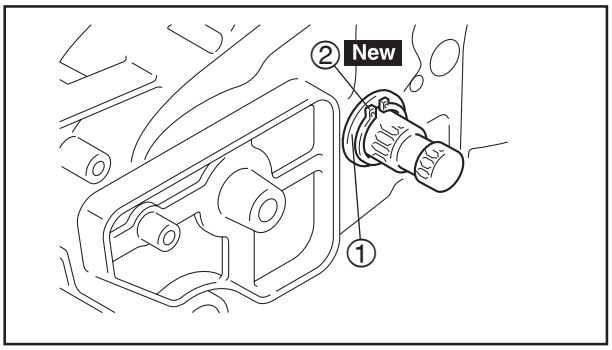
EAS00340
INSTALLING THE KICKSTARTER

1. Install:
   - solid bush ①
   - kickstarter shaft ②
   - kickstarter spring ③

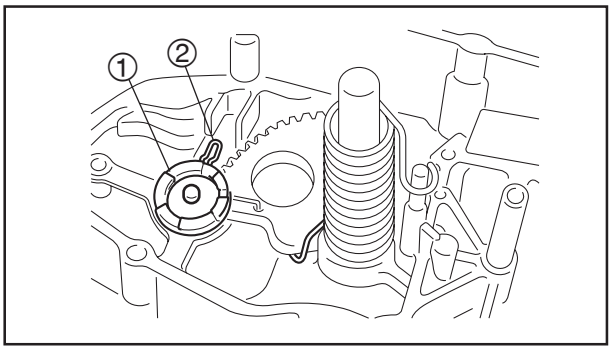


2. Hook:
   - kickstarter spring

NOTE:
Hook the spring end ⓐ on the kickstarter shaft ⓑ as shown, and hook the other end ⓒ on the projection ⓓ .

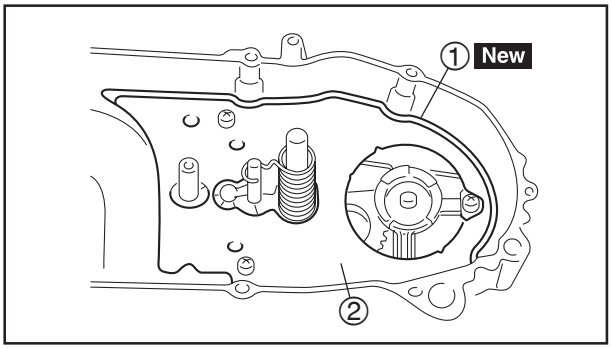


3. Install:
   - plain washer ①
   - circlip ② **New**



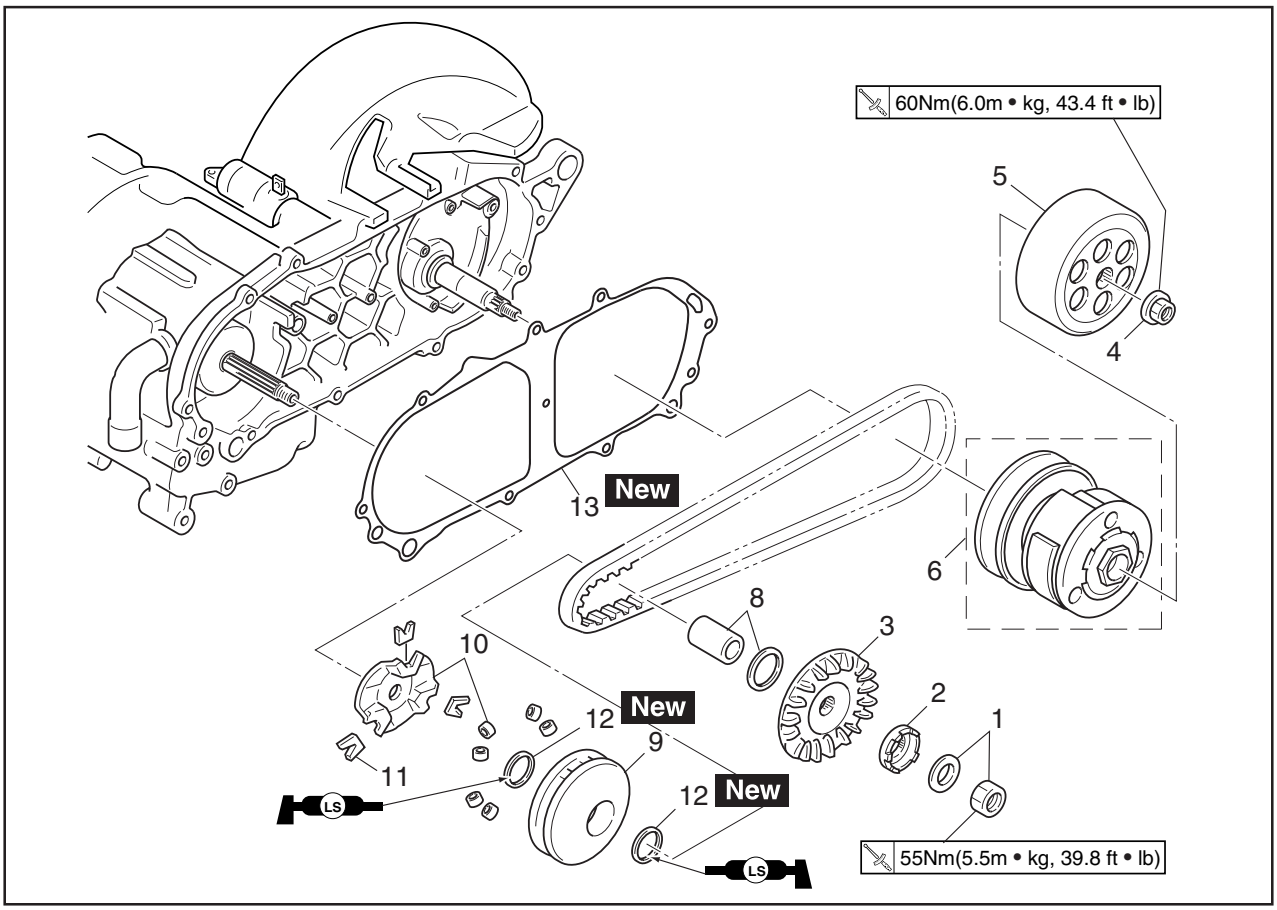
4. Install:
   - kick pinion gear ①
   - kick pinion gear clip ②

NOTE:
Install the clip at the position shown.



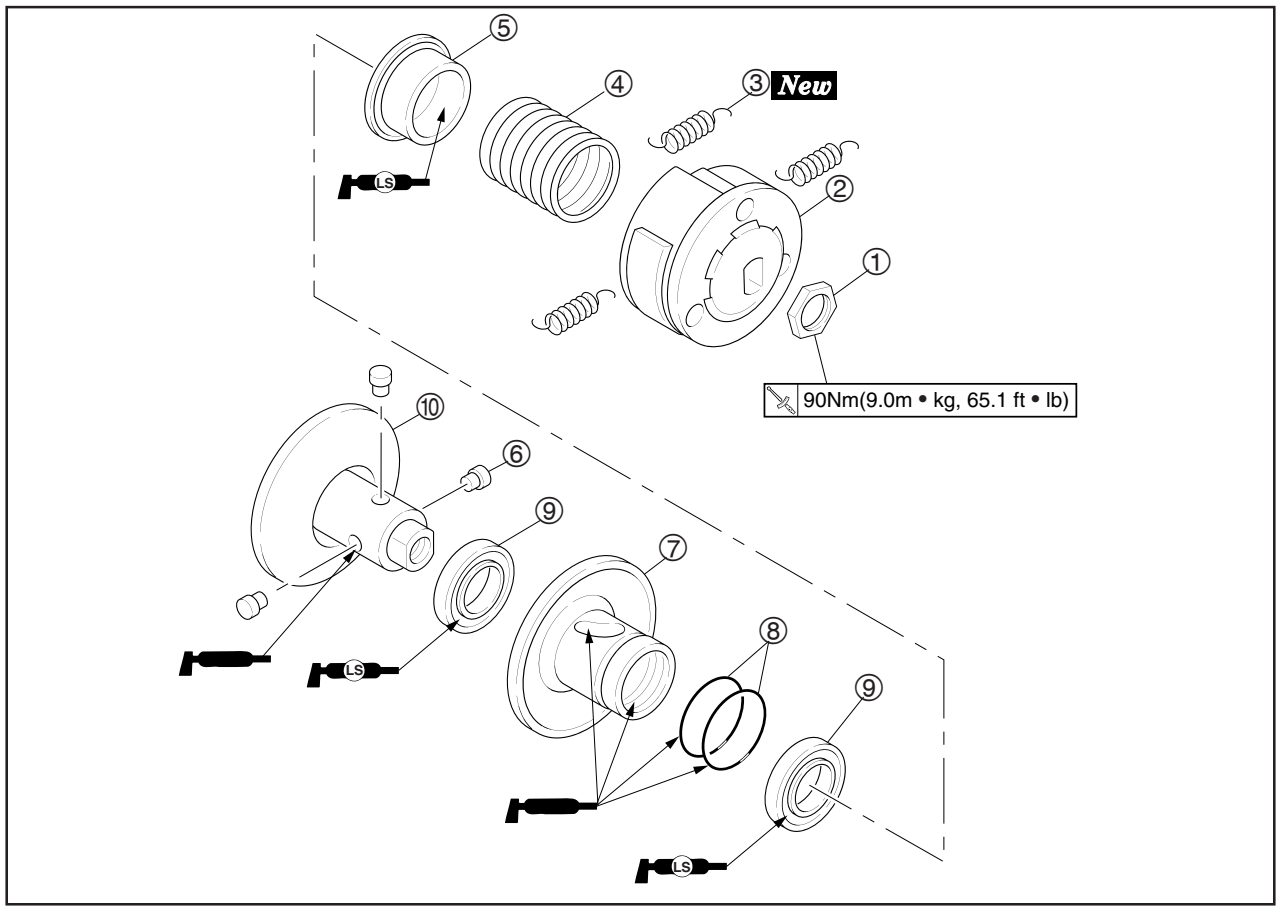
5. Install:
   - gasket ① **New**
   - plate ②

V-BELT, CLUTCH, PRIMARY AND SECONDARY SHEAVE

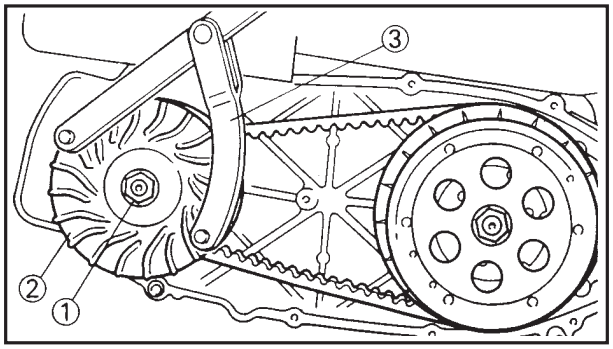


Order	Job/Part	Q'ty	Remarks
	Removing the V-belt, clutch, primary and secondary sheave		Remove the parts in the order listed.
1	Primary sheave nut / Plate washer	1/1	
2	Oneway clutch	1	Refer to " REMOVING AND INSTALLING THE SECONDARY SHEAVE "
3	Primary fixed sheave	1	
4	Secondary sheave nut	1	
5	Clutch housing	1	
6	Secondary sheave assembly	1	Refer to " REMOVING AND INSTALLING THE PRIMARY SHEAVE "
7	V-belt	1	
8	Washer / Collar	1/1	
9	Primary sliding sheave	1	
10	Cam / Weight	1/6	
11	Slider	3	
12	Oil seal	2	
13	Gasket	1	
			For installation, reverse the removal procedure.

DISASSEMBLING THE SECONDARY SHEAVE



Order	Job/Part	Q'ty	Remarks
	Disassembling the secondary sheave		Disassemble the parts in the order listed.
①	Clutch carrier nut	1	
②	Clutch carrier	1	
③	Clutch shoe spring	3	
④	Compression spring	1	
⑤	Spring seat	1	Refer to " REMOVING AND INSTALLING
⑥	Guide pin	3	THE SECONDARY SHEAVE "
⑦	Secondary sliding sheave	1	
⑧	O-ring	2	
⑨	Oil seal	2	
⑩	Secondary fixed sheave	1	
			For assembly, reverse the disassembly procedure.

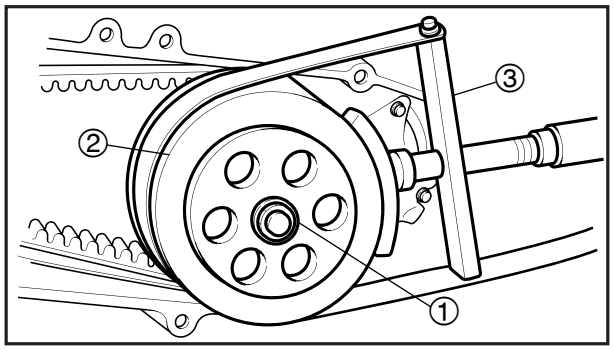


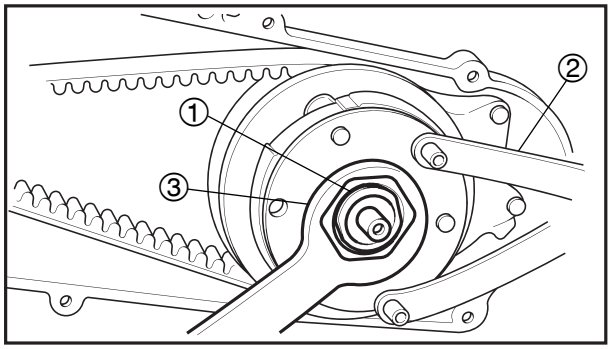
EAS00317
REMOVING THE PRIMARY SHEAVE

1. Remove:
   - primary sheave nut ①
   - plate washer
   - primary fixed sheave ②

NOTE:
While holding the primary fixed sheave with the rotor holding tool ③, loosen the primary fixed sheave nut.

Rotor holding tool:
90890-01235 (YU-01235)





EAS00318
REMOVING THE SECONDARY SHEAVE AND V-BELT

1. Remove:
   - secondary sheave nut ①
   - clutch housing ②

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

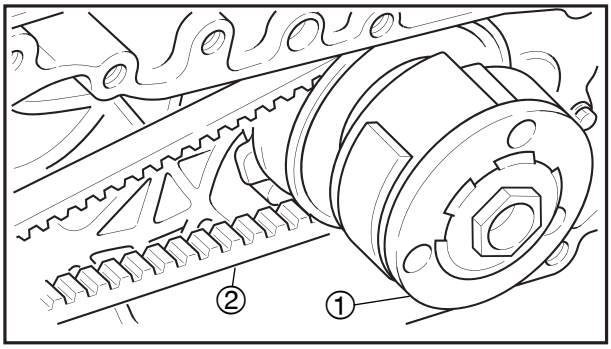
Sheave holder:
90890-01701 (YS-01880-A)

2. Loosen:
   - clutch carrier nut ①

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

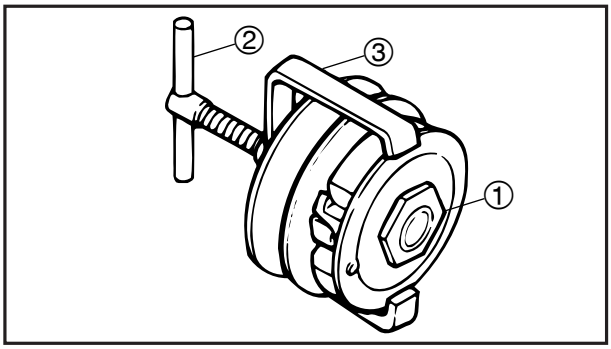
NOTE:
While holding the clutch carrier with the rotor holding tool ②, loosen the clutch carrier nut one full turn with the locknut wrench ③.

Roter holding tool:
90890-01235 (YU-01235)
Locknut wrench:
90890-01348 (YM-01348)



3. Remove:
   - secondary sheave assembly ①
   - V-belt ②

NOTE:
Remove the V-belt and clutch assembly from the primary sheave side.

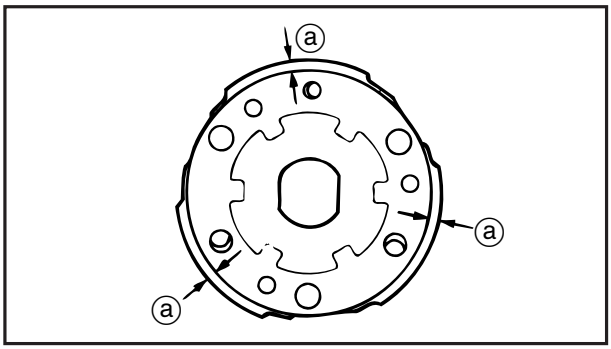


EAS00319
DISASSEMBLING THE SECONDARY SHEAVE

1. Remove:
   - clutch carrier nut ①

NOTE:
Install the clutch spring holder ② and clutch spring holder arm ③ onto the secondary sheave as shown. Then, compress the spring, and remove the clutch carrier nut ①.

Clutch spring holder
90890-01337 (YM-33285)
(YM-33285-6)



CHECKING THE CLUTCH SHOE

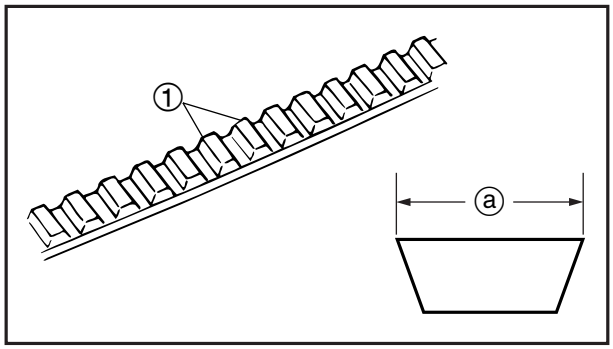
1. Measure:
   - Clutch shoe
     Scratches → Glaze using coares sandpaper.
     Damage/wear → Replace

Clutch shoe thickness
3.5 mm (0.138 in)
<Limit>: 2.0 mm (0.079 in)

NOTE:
- Inspect clutch shoes ⓐ.
- After removing the clutch weight spring, do not use them again.
- Replace the all three as a set.

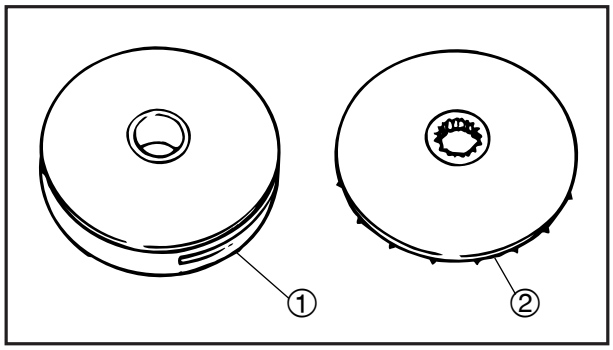
EAS00320
CHECKING THE V-BELT

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



2. Measure:
   - V-belt width ⓐ
     Out of specification → Replace.

V-belt width
21.6 mm (0.0850 in)
<Limit>: 19.5 mm (0.768 in)



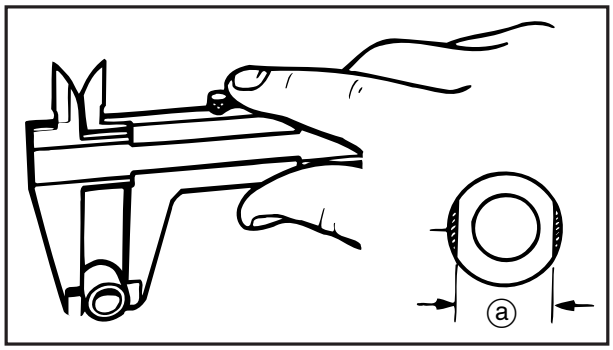
CHECKING THE PRIMARY SHEAVE

1. Check:
   - Primary sliding sheave①
   - Primary fixed sheave②
     Cracks/damage/wear → Replace the primary sliding sheave, primary fixed sheave and V-belt.

EAS00321
CHECKING THE PRIMARY SHEAVE WEIGHTS

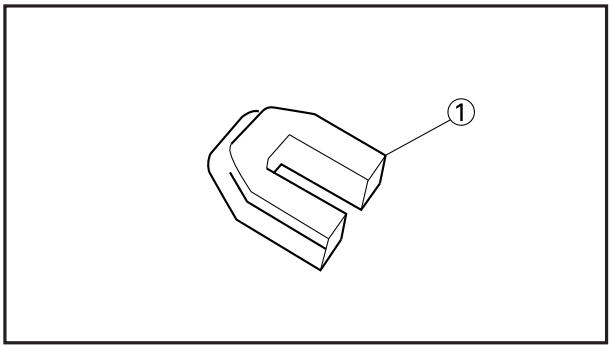
The following procedure applies to all of the primary sheave weights.

1. Check:
   - primary sheave weight
     Cracks/damage/wear → Replace.



2. Measure:
   - primary sheave weight outside diameter ⓐ
     Out of specification → Replace.

Primary sheave weight outside diameter
19.9~20.1 mm (0.783~0.791 in)



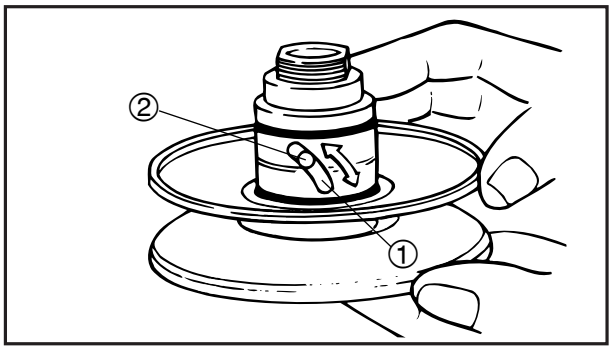
CHECKING THE SLIDER

1. Check:
   slider ①
   Damage/wear→ Replace

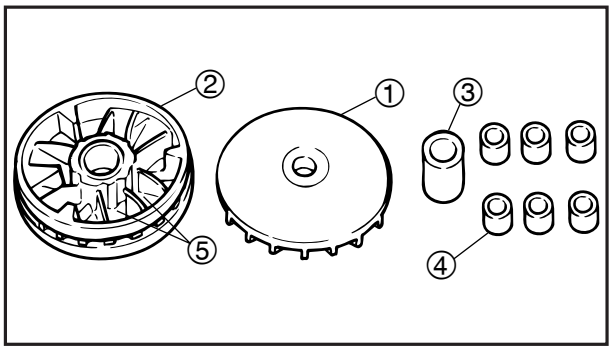
EAS00322

CHECKING THE SECONDARY SHEAVE

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



2. Check:
   - torque cam 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.

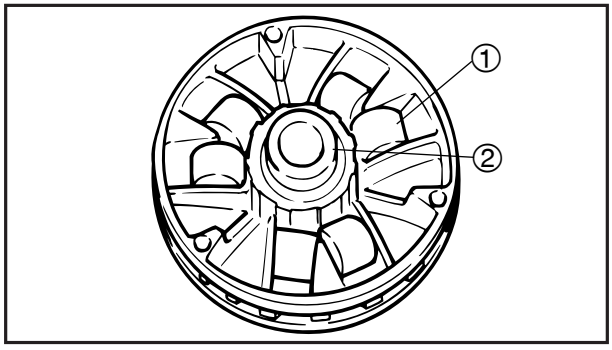


EAS00323

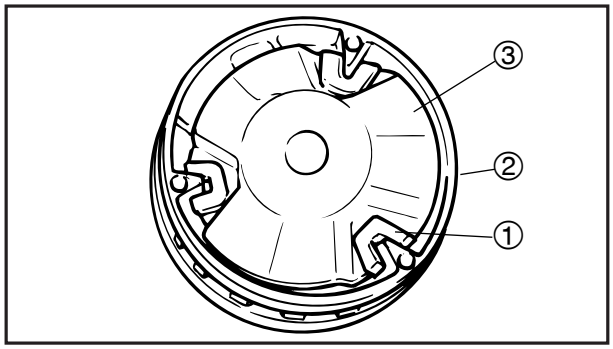
ASSEMBLING THE PRIMARY SHEAVE

1. Clean:
   - primary fixed sheave ①
   - primary sliding sheave ②
   - collar ③
   - primary sheave weights ④

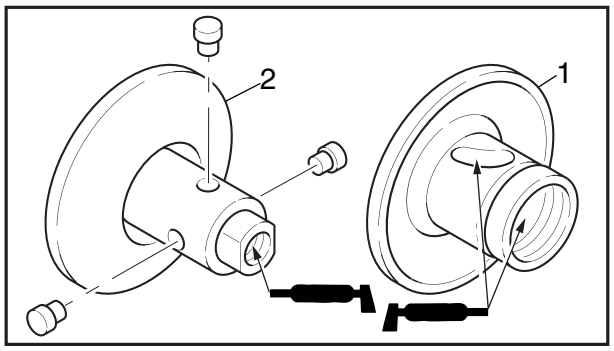
NOTE:
Use thinner to clean up grease, dirt on the primary sliding sheave cam side ⑤.



2. Install:
   - primary sheave weights ①
   - collar ②



3. Install:
   - slider ①
   - primary sliding sheave ②
   - cam ③

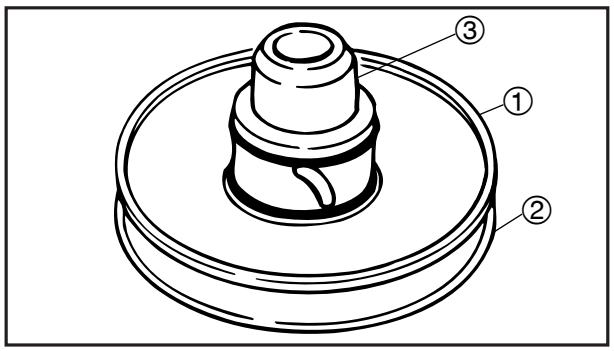


EAS00324
ASSEMBLING THE SECONDARY SHEAVE

1. Lubricate:
   - secondary fixed sheave's inner surface ①
   - secondary sliding sheave's inner surface ②
   - torque cam groove
   - oil seals
   - bearings

   (with the recommended lubricant)

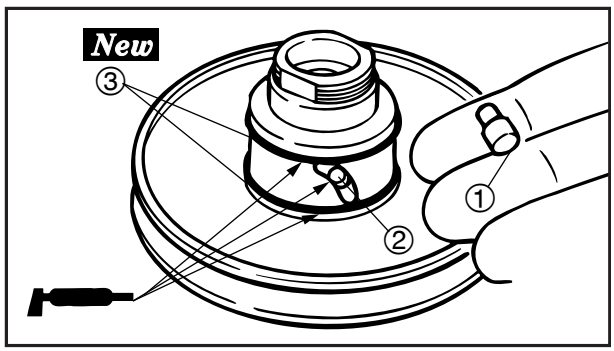
	Recommended lubricant **BEL-RAY assembly lube**



2. Install:
   - secondary sliding sheave ①

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

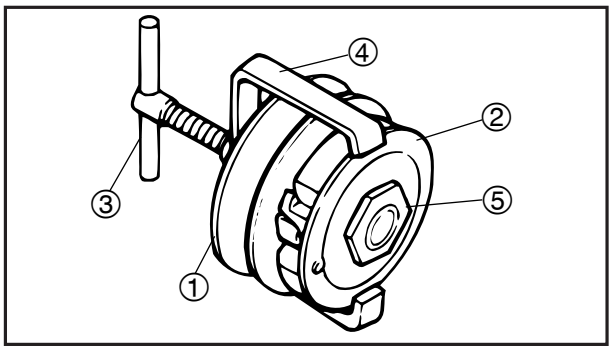
	Oil seal guide **90890-01384 (YM-33299)**



3. Install:
   - guide pin ①
4. Lubricate:
   - guide pin groove ②
   - o-ring New ③

   (with the recommended lubricant)

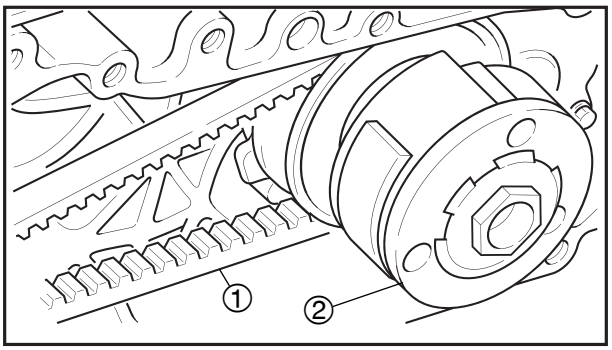
	Recommended lubricant **BEL-RAY assembly lube**



5. Install:
   - secondary sheave ①
   - spring
   - clutch carrier ②

NOTE:
Attach the clutch spring holder ③ and clutch spring holder arm ④ onto the secondary sheave as shown. Then, compress the spring, and tighten the clutch carrier nut ⑤.

Clutch spring holder
90890-01337 (YM-33285)
(YM-33285-6)

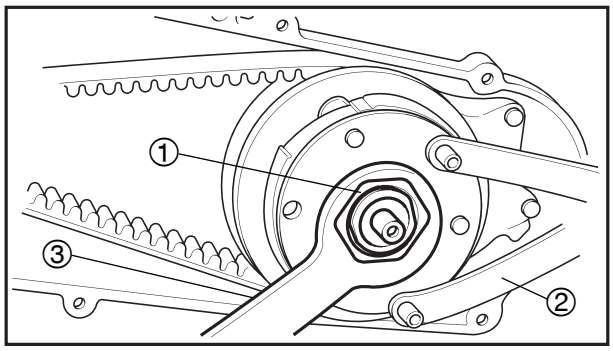


EAS00325
INSTALLING THE BELT DRIVE

1. Install:
   - V-belt ①
   - clutch assembly ②

CAUTION:
Do not allow grease to contact the V-belt, secondary sheave assembly.

NOTE:
Install the V-belt onto the primary sheave side.

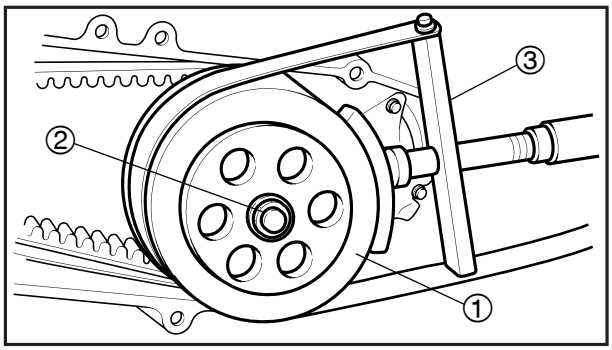


2. Install:
   - clutch carrier nut ①

	90 Nm (9.0 m • kg, 65.1 ft • lb)

NOTE:
While holding the clutch carrier with the rotor holding tool ②, tighten the clutch carrier nut with the locknut wrench ③.

	Rotor holding tool **90890-01235** **Locknut wrench** **90890-01348 (YM-01348)**

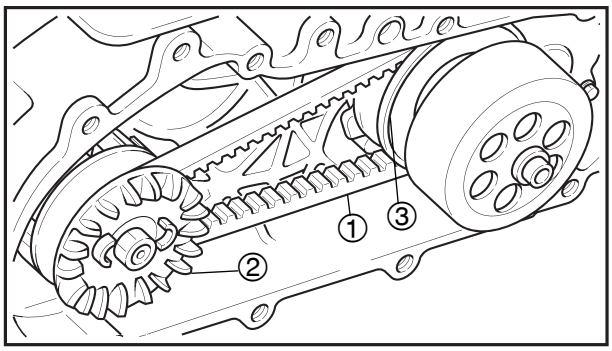


3. Install:
   - clutch housing ①
   - secondary sheave nut②

	60 Nm (6.0 m • kg, 43.4 ft • lb)

NOTE:
Tighten the secondary sheave nut with the sheave holder ③.

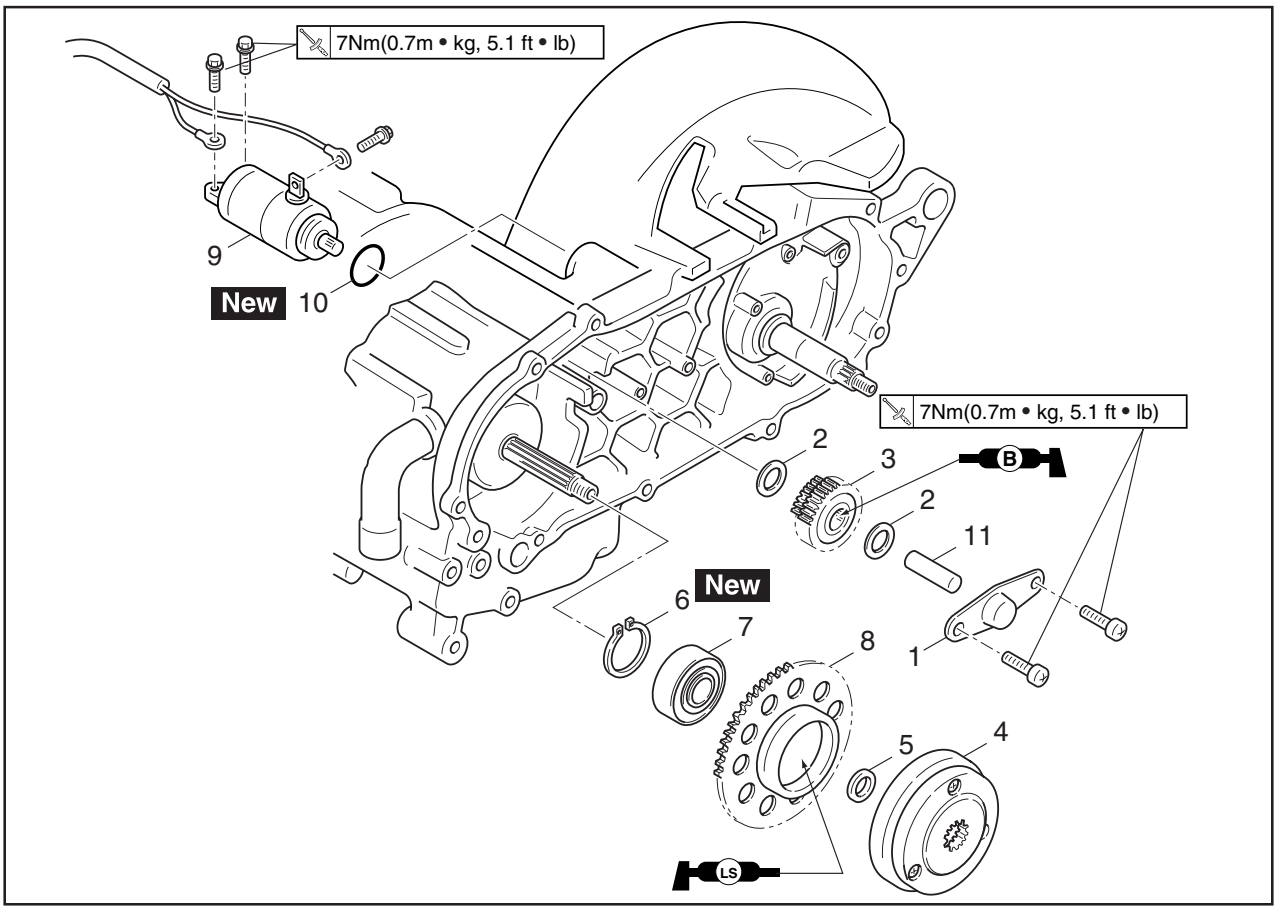
	Sheave holder **90890-01701 (YS-01880-A)**



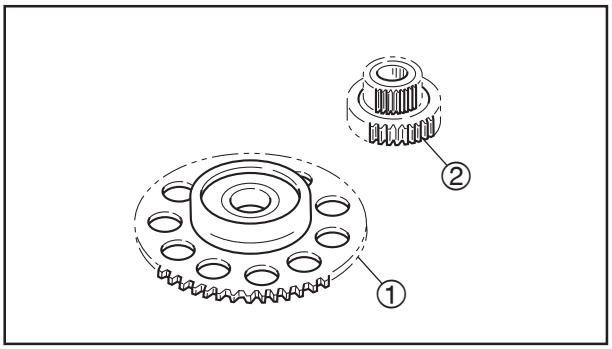
4. Position:
   - V-belt ①

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

STARTER CLUTCH AND STARTER MOTOR



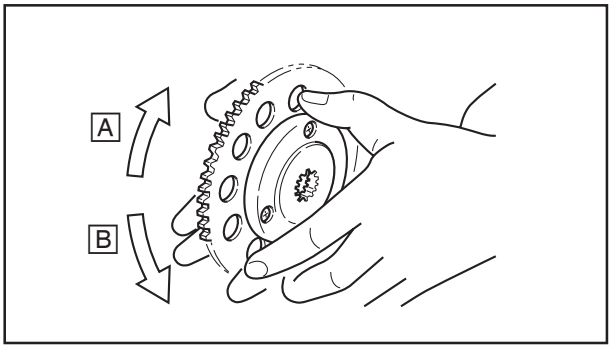
Order	Job/Part	Q'ty	Remarks
	Removing the starter clutch and starter motor		Disassemble the parts in the order listed.
	Primary sheave		Refer to " REMOVING THE PRIMARY SHEAVE "
1	Idle gear plate	1	
2	Plate washer	2	
3	Idle gear	1	
4	Starter clutch	1	
5	Washer	1	
6	Circlip	1	
7	Bearing	1	
8	Starter wheel gear	1	
9	Starter motor	1	
10	O-ring	1	
11	Shaft	1	
			For installation, reverse the removal procedure.



CHECKING THE STARTER WHEEL GEAR

1. Check:
   - starter wheel gear ①
   - idle gear②

   Burrs/chips/roughness/wear → Replace



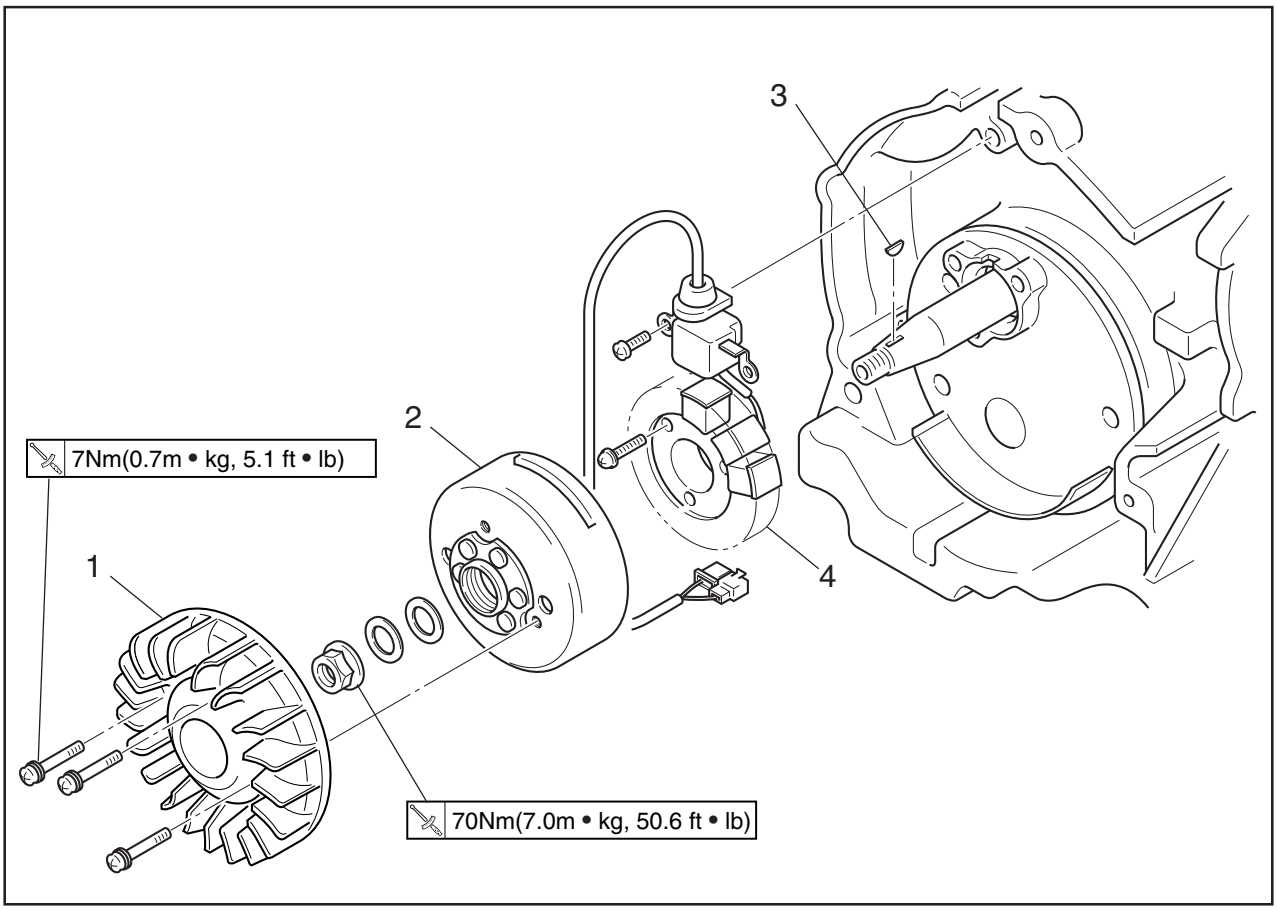
2. Check:
   - starter clutch operation

****

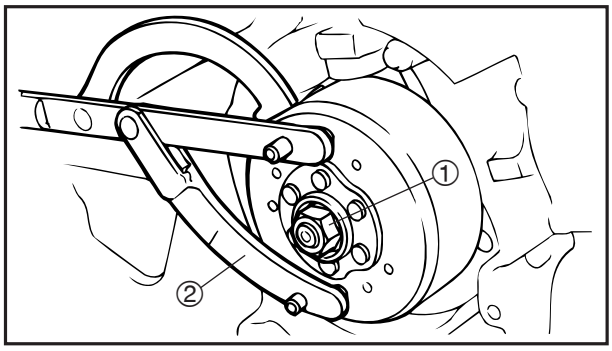
a. Install the starter clutch gear ① onto the starter clutch② and hold the starter clutch.
b. When turning the starter wheel gear clockwise [A], the starter clutch and the starter wheel gear should engage, otherwise the starter clutch is faulty and must be replaced.
c. When turning the starter wheel gear counterclockwise [B], it should turn freely. otherwise the starter clutch is faulty and must be replaced.

****

C.D.I. MAGNETO



Order	Job/Part	Q'ty	Remarks
	Removing the C.D.I. magneto		Disassemble the parts in the order listed.
	Air shroud 1		Refer to "CYLINDER HEAD"in chapter 3.
1	Fan	1	**CAUTION:**
2	C.D.I. magneto rotor	1	**Disconnect the C.D.I. magneto lead**
3	Woodruff key	1	**coupler.**
4	Stator coil assembly	1	
			For installation, reverse the removal procedure.



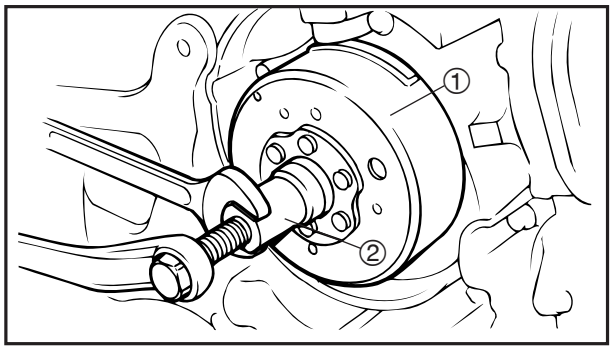
REMOVING THE C.D.I. MAGNETO

1. Remove:
   - nut ①
   - plate washer

NOTE:

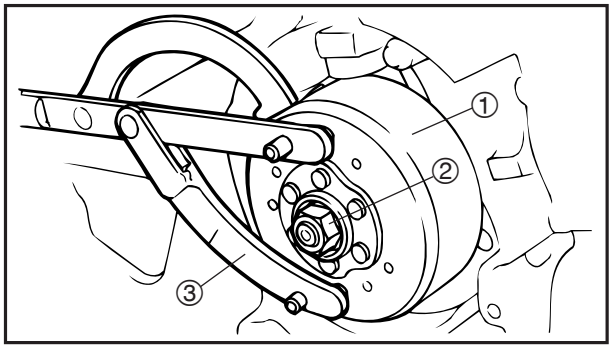
- While holding the C.D.I. magneto rotor with the holding tool ②, loosen the C.D.I. magneto nut①.
- Do not allow the sheave holder to touch the projection on the C.D.I. magneto rotor.

	Rotor holding tool **90890-01235 (YU-01235)**



2. Remove:
   - C.D.I. magneto rotor①
   - (with flywheel puller ②)

	Flywheel puller **90890-01189 (YM-01189)**



INSTALLING THE C.D.I. MAGNETO

1. Install:
   - C.D.I. magneto rotor ①

NOTE:

- Clean the tapered portion of the crankshaft and the magneto rotor hub.
- When installing the magneto rotor, make sure the woodruff key is properly seated in the keyway of the crankshaft.

2. Tighten:
   - nut ②

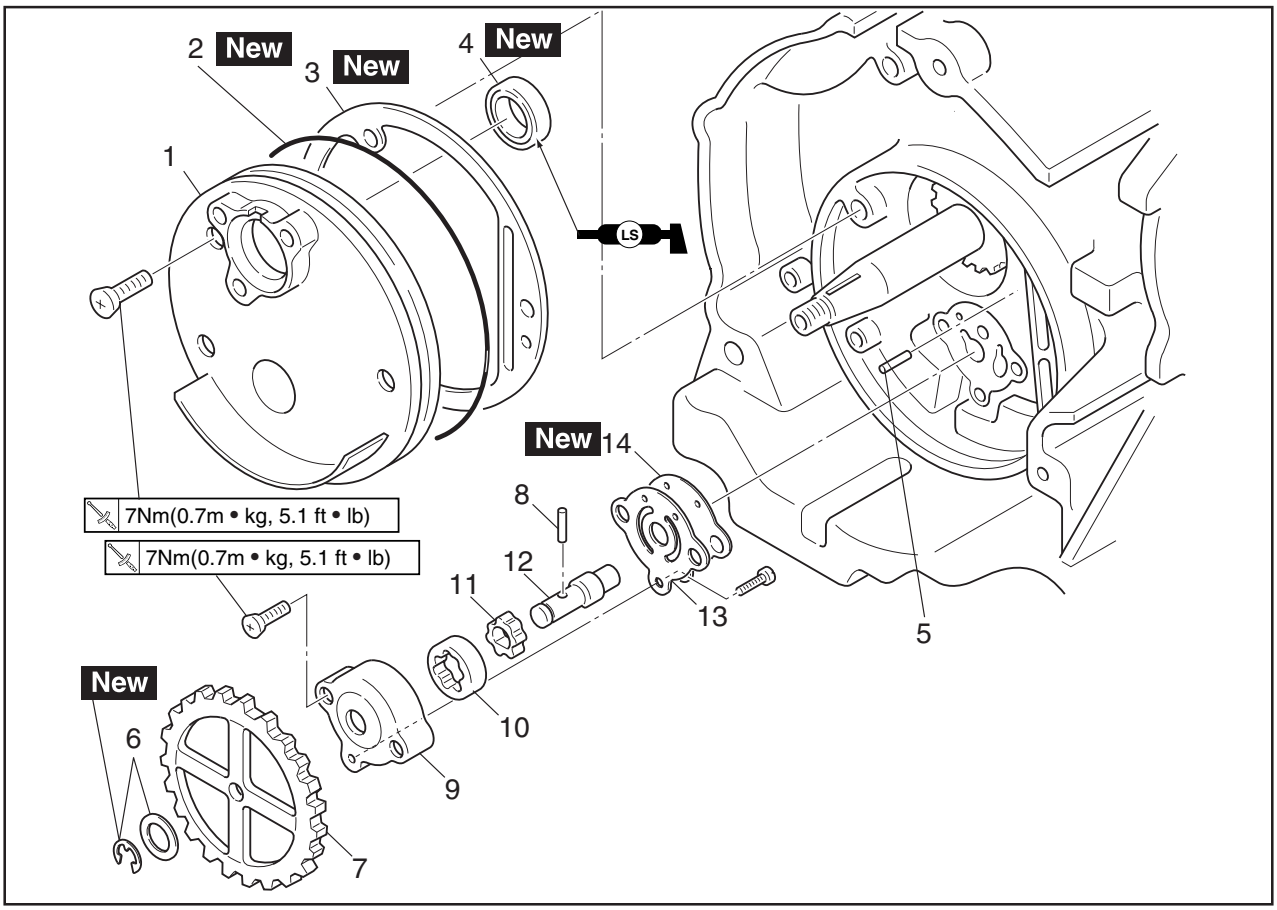
	70 Nm (7.0 m • kg, 50.6 ft • lb)

NOTE:

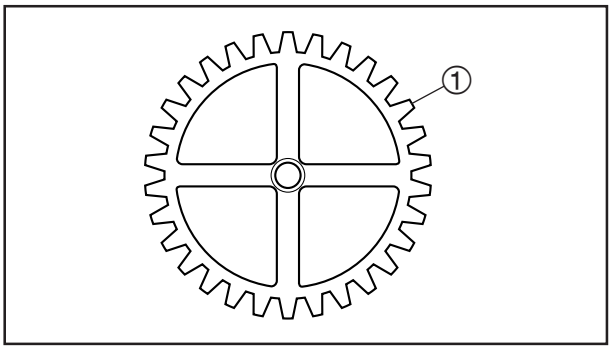
- While holding the C.D.I. magneto with the holding tool ③, tighten the C.D.I. magneto rotor nut ②.
- Do not allow the sheave holder to touch the projection on the C.D.I. magneto rotor.

	Rotor holding tool **90890-01235 (YU-01235)**

EAS00360
OIL PUMP

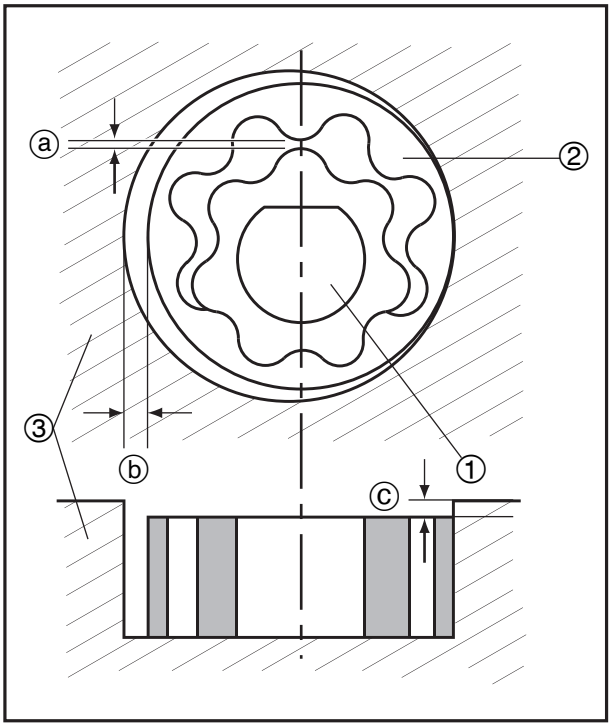


Order	Job/Part	Q'ty	Remarks
	Disassembling the oil pump		Remove the parts in the order listed.
	C.D.I. magneto		Refer to " C.D.I. MAGNETO "
1	Cover	1	
2	O-ring	1	
3	Gasket	1	
4	Oil seal	1	
5	Dowel pin	1	
6	Circlip / Plate washer	1/1	
7	Oil pump driven gear	1	
8	Dowel pin	1	
9	Oil pump body	1	
10	Outer rotor	1	
11	Inner rotor	1	
12	Oil pump shaft	1	
13	Oil pump housing cover	1	
14	Gasket	1	
			For assembly, reverse the disassembly procedure.



EAS00364
CHECKING THE OIL PUMP

1. Check:
   - oil pump driven gear ①
     Cracks/damage/wear → Replace the defective part(s).

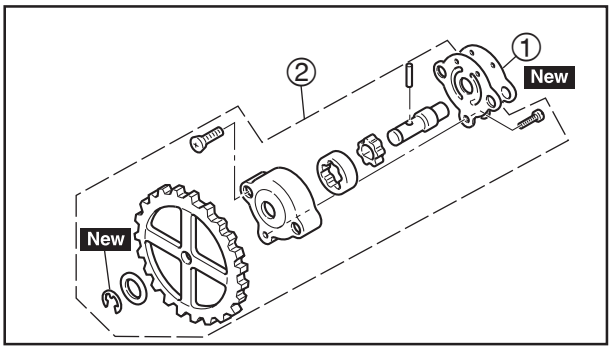


2. Measure:
   - inner-rotor-to-outer-rotor-tip clearance ⓐ
   - outer-rotor-to-oil-pump-housing clearance ⓑ
   - oil-pump-housing-to-inner-rotor-and-outer-rotor clearance ⓒ
     Out of specification → Replace the oil pump.

① Inner rotor
② Outer rotor
③ Oil pump housing

Inner-rotor-to-outer-rotor-tip clearance
0.15 mm (0.006 in)
<Limit>: 0.23 mm (0.009 in)
Outer-rotor-to-oil-pump-housing clearance
0.013 ~ 0.036 mm
(0.0005~0.0014 in)
<Limit>: 0.106 mm (0.0042 in)
Oil-pump-housing-to-inner-rotor-and-outer-rotor clearance
0.06 ~ 0.10 mm (0.002~0.004 in)
<Limit>: 0.17 mm (0.0067 in)

3. Check:
   - oil pump operation
     Rough movement → Repeat steps (1) and (2) or replace the defective part(s).



EAS00376

INSTALLING THE OIL PUMP

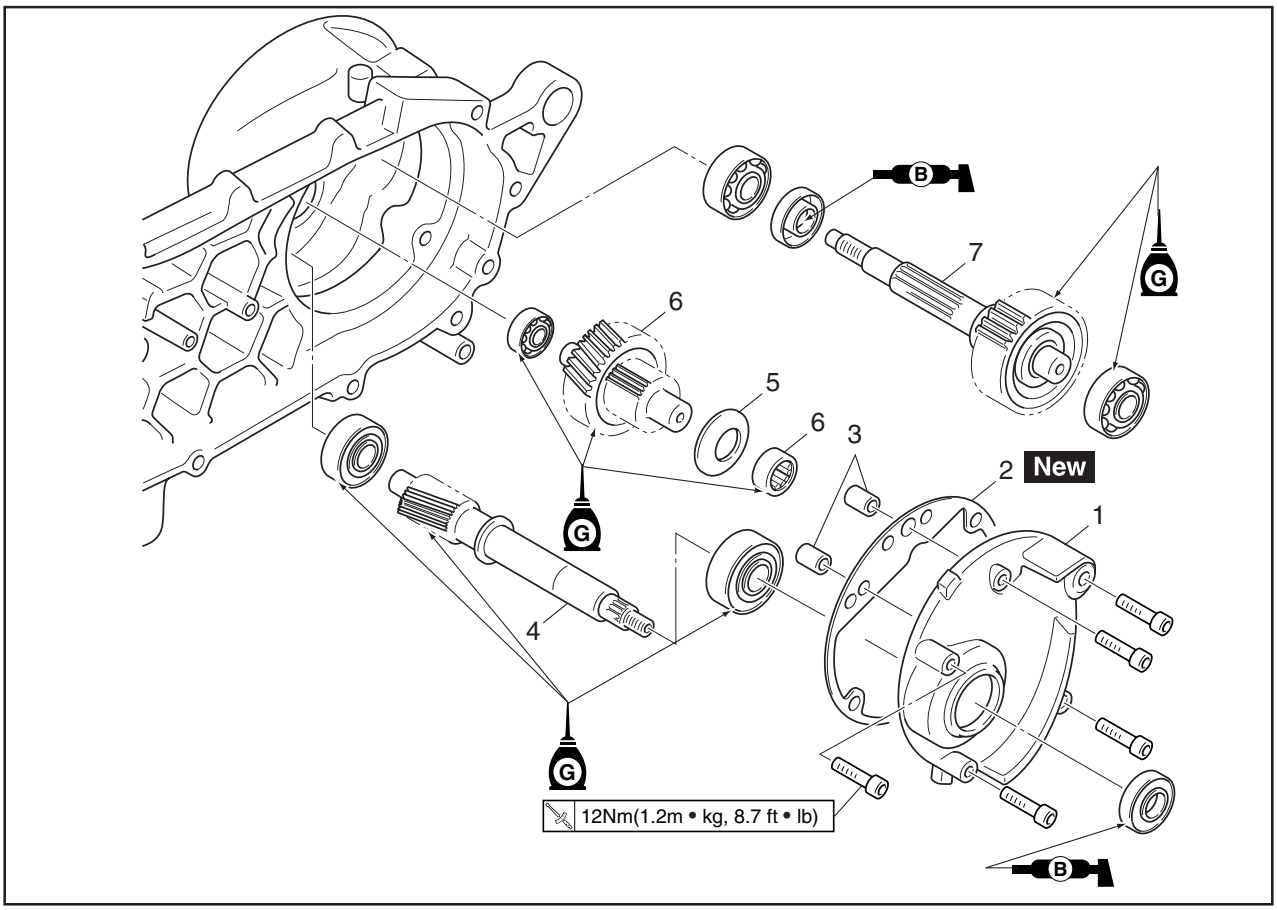
1. Install:
   - gasket ① **New**
   - oil pump assembly②
   - oil pump bolt

	7 Nm (0.7 m • kg, 5.1 ft • lb)

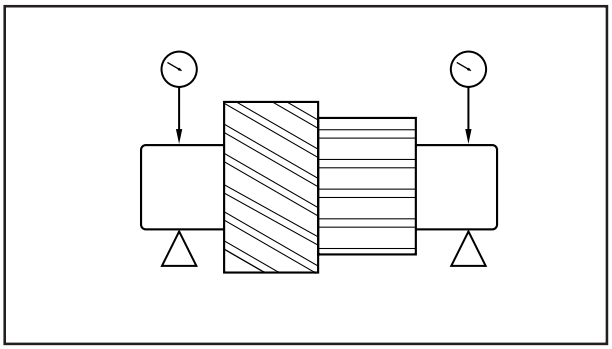
CAUTION:

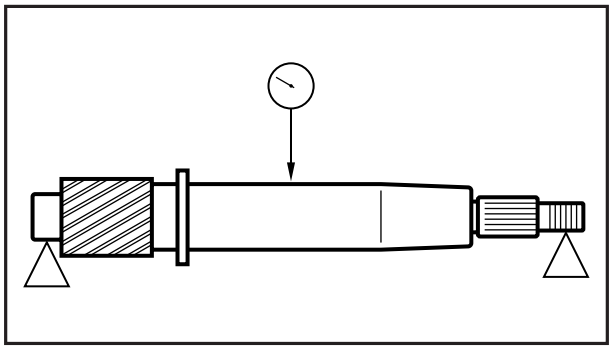
After tightening the bolts, make sure the oil pump turns smoothly.

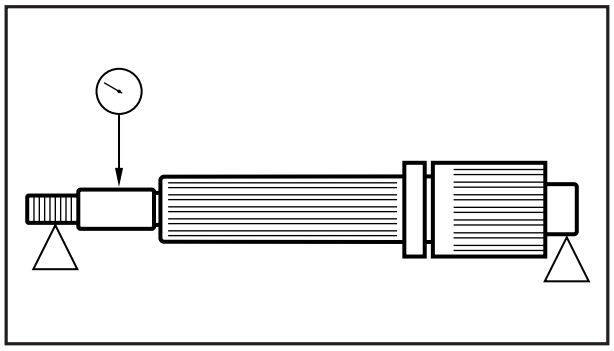
EAS00419
TRANSMISSION

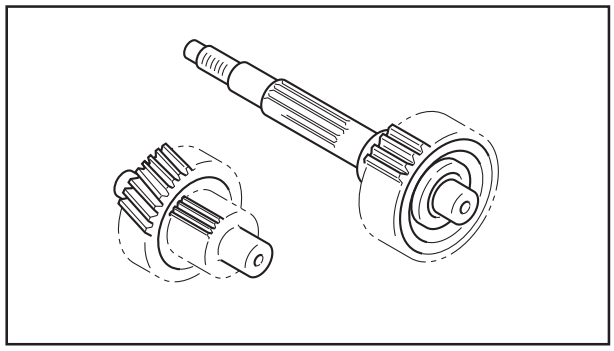


Order	Job/Part	Q'ty	Remarks
	Removing the transmission, shift drum assembly, and shift forks		Remove the parts in the order listed.
	Transmission oil		Drain.
	Rear wheel		Refer to "REAR WHEEL AND REAR BRAKE " in chapter 4.
	Crankcase cover		Refer to "BELT DRIVE ".
	Belt drive		Refer to "V-BELT, CLUTCH, PRIMARY AND SECONDARY SHEAVE ".
	Secondary sheave		
1	Crankcase cover- 2	1	
2	Crankcase cover gasket- 2	1	
3	Dowel pin	2	
4	Primary drive gear shaft	1	
5	Plate washer	1	
6	Main axle	1	
7	Drive axle	1	
			For installation, reverse the removal procedure.









EAS00425

CHECKING THE TRANSMISSION

1. Measure:
   - main axle runout
     (with a centering device and dial gauge)
     Out of specification → Replace the main axle.

Main axle runout limit
0.02 mm (0.0008 in)

2. Measure:
   - primary drive gear shaft runout
     (with a centering device and dial gauge)
     Out of specification → Replace the drive axle.

Primary drive gear shaft runout limit
0.02 mm (0.0008 in)

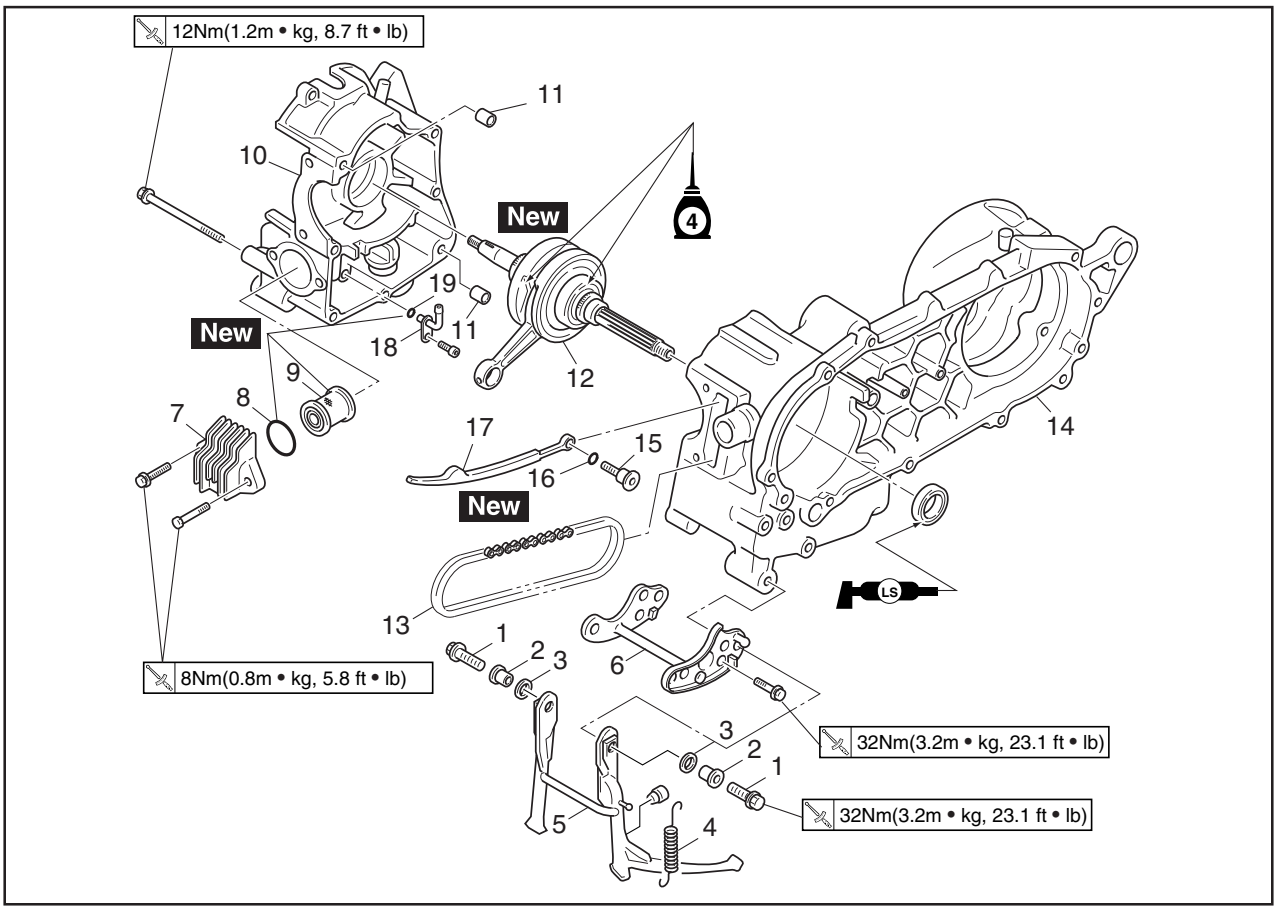
3. Measure:
   - drive axle runout
     (with a centering device and dial gauge)
     Out of specification → Replace the drive axle.

Drive axle runout limit
0.02 mm (0.0008 in)

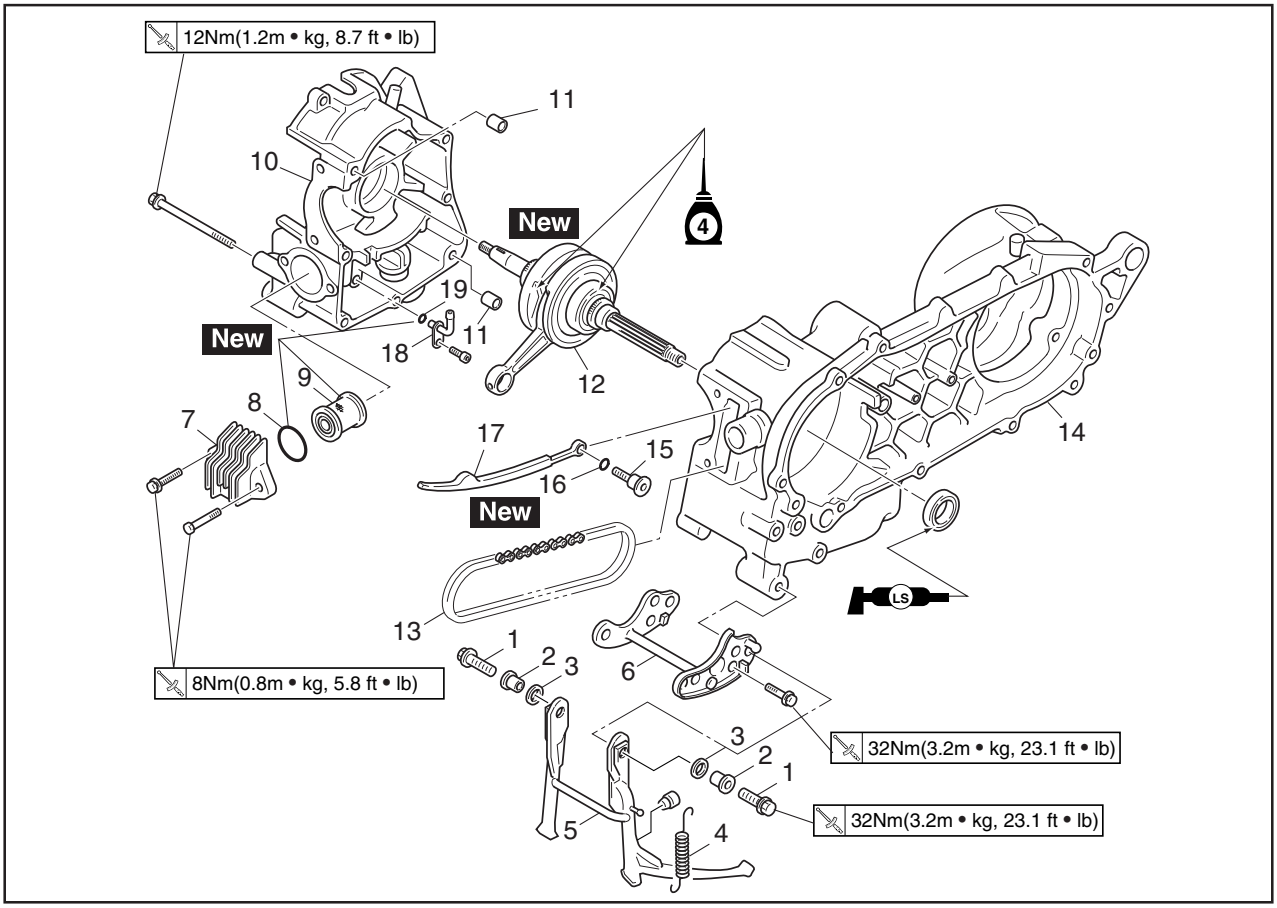
4. Check:
   - transmission gears
     Blue discoloration/pitting/wear → Replace the defective gear(s).
   - transmission gear dogs
     Cracks/damage/rounded edges → Replace the defective gear(s).
5. Check:
   - transmission gear engagement
     (each pinion gear to its respective wheel gear)
     Incorrect → Reassemble the transmission axle assemblies.
6. Check:
   - transmission gear movement
     Rough movement → Replace the defective part(s).

EAS00381

CRANKCASE AND CRANKSHAFT



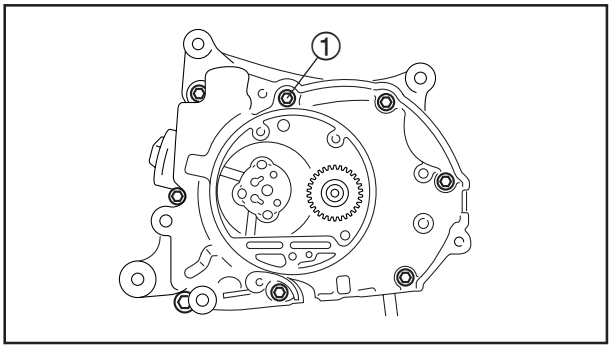
Order	Job/Part	Q'ty	Remarks
	Removing the crankshaft assembly		Remove the parts in the order listed.
	Engine		Refer to " ENGINE "
	Cylinder head		Refer to "CYLINDER HEAD "
	Cylinder piston		Refer to "CYLINDER PISTON "
	V-belt, clutch, primary / Secondary sheave		Refer to "V-BELT, CLUTCH, PRIMARY AND SECONDARY SHEAVE ".
	Starter clutch		Refer to "STARTER CLUTCH AND STARTER MOTOR"
	C.D.I. magneto		Refer to "C.D.I. MAGNETO "
	Oil pump		Refer to "OIL PUMP "
	Rear wheel		Refer to "REAR WHEEL "
1	Bolt	2	
2	Collar	2	
3	Plate washer	2	
4	Spring	1	
5	Centerstand	1	
6	Engine bracket	1	
7	Oil elemet cover	1	
8	O-ring	1	
9	Oil elemet	1	
10	Crankcase (right)	1	



Order	Job/Part	Q'ty	Remarks
11	Dowel pin	2	
12	Crankshaft	1	Refer to "DISASSEMBLING THE CRANKCASE "
13	Timing chain	1	
14	Crankcase (left)	1	Refer to "INSTALLING THE CRANKSHAFT "
15	Bolt	1	
16	O-ring	1	
17	Timing chain guide	1	
18	Oil pipe	1	
19	O-ring	1	
			For installation, reverse the removal procedure.

DISASSEMBLING THE CRANKCASE

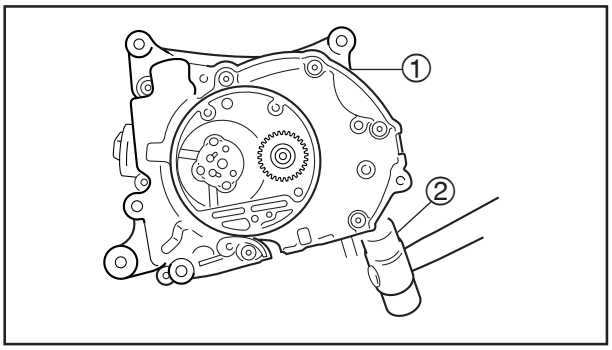
1. Remove:
   - centerstand assembly



2. Remove:
   - crankcase bolts ①

NOTE:

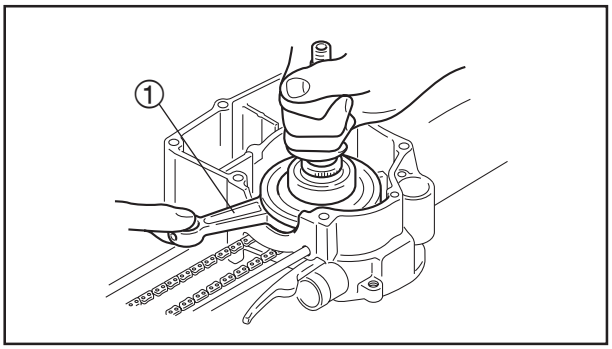
Loosen each bolt 1/4 of a turn at a time, in stages and in a crisscross pattern. After all of the bolts are fully loosened, remove them.

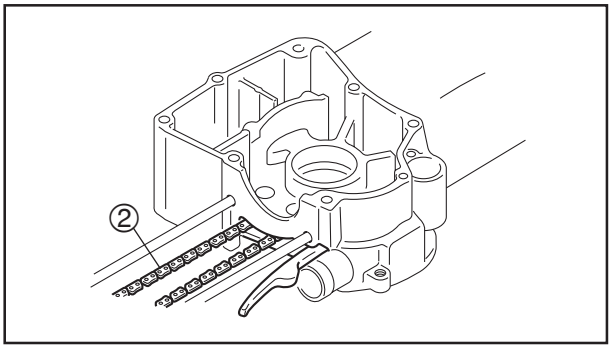


3. Remove:
   - right crankcase①

NOTE:

Tap on one side of the crankcase with a soft-face hammer②. 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.





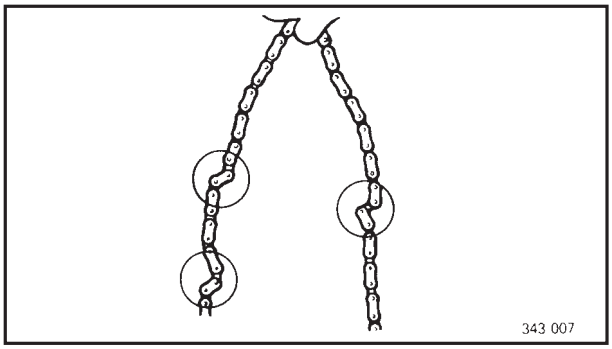
EAS00389

REMOVING THE CRANKSHAFT ASSEMBLY

1. Remove:
   - crankshaft assembly ①
   - timing chain ②

NOTE:

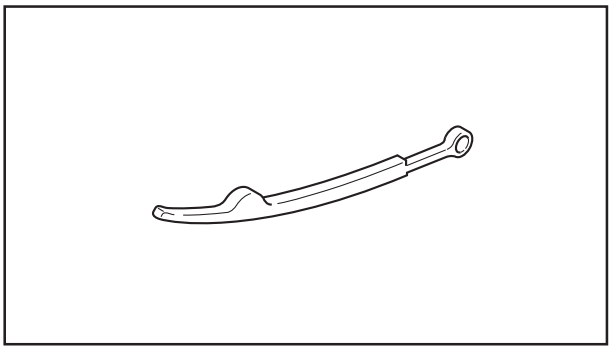
- Before removing the crankshaft assembly, remove the timing chain from the crankshaft sprocket.
- The crankshaft assembly cannot be removed if the timing chain is attached onto the crankshaft sprocket.



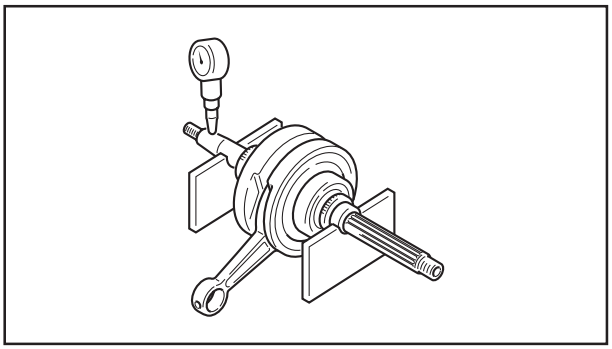
EAS00207

CHECKING THE TIMING CHAIN AND TIMING CHAIN GUIDES

1. Check:
   - timing chain
     Damage/stiffness → Replace the timing chain.



2. Check:
   - timing chain guide
     Damage/wear → Replace the timing chain guide.

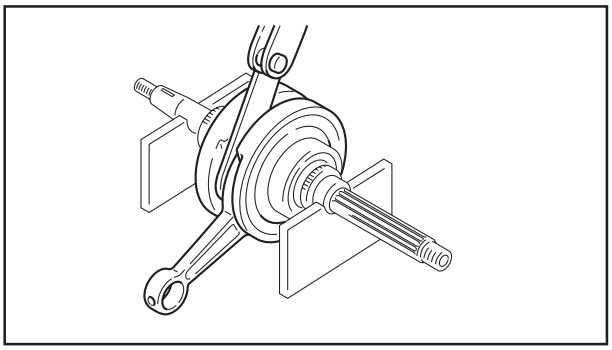


EAS00394
CHECKING THE CRANKSHAFT AND CONNECTING ROD

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

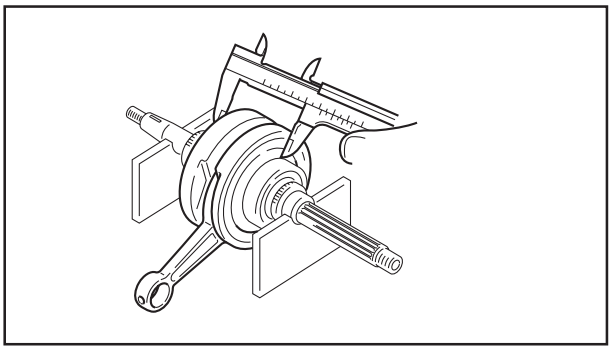
NOTE:
Turn the crankshaft slowly.

Maximum crankshaft runout
0.03 mm (0.0012 in)



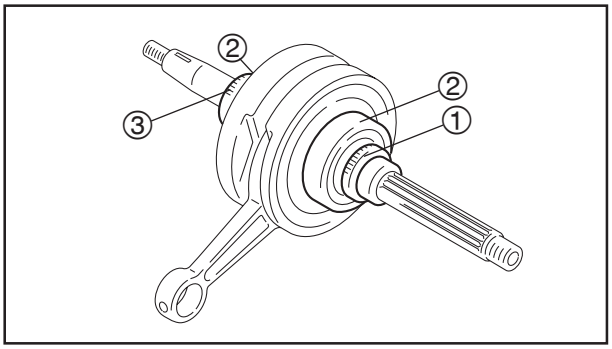
2. Measure:
   - big end side clearance
     Out of specification → Replace the big end bearing, crankshaft pin, or connecting rod.

Big end side clearance
0.10~0.40 mm (0.004~0.016 in)

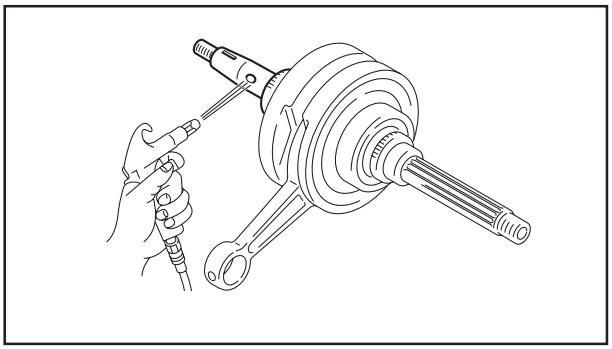


3. Measure:
   - crankshaft width
     Out of specification → Replace the crankshaft.

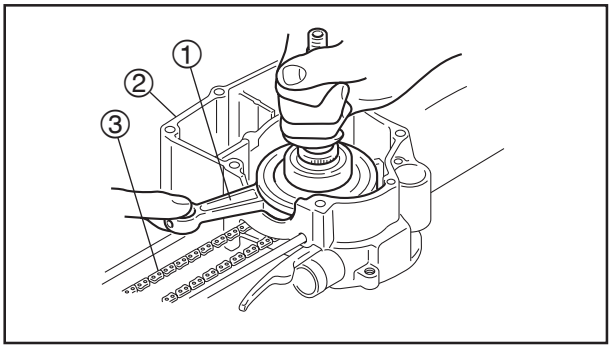
Crankshaft width
45.15~45.20 mm (1.778~1.780 in)



4. Check:
   - crankshaft sprocket ①
     Damage/wear → Replace the crankshaft.
   - bearing ②
     Cracks/damage/wear → Replace the crankshaft.
   - oil pump drive gear ③
     Damage/wear → Replace the crankshaft.



5. Check:
   - crankshaft journal
     Scratches/wear → Replace the crankshaft.
   - crankshaft journal oil passage
     Obstruction → Blow out with compressed air.



EAS00408
INSTALLING THE CRANKSHAFT

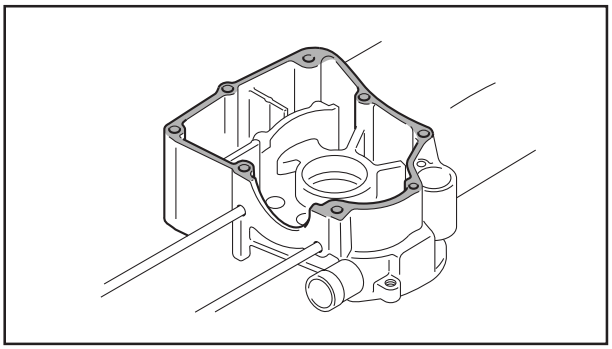
1. Install:
   - crankshaft assembly ①
   - crankcase②
   - timing chain③

CAUTION:

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

NOTE:

Put the timing chain in parallel into the crank case, then use hands to place the crank shaft Ass'y into the crank case. Manually rotate the crank shaft to check whether it is tightly engaged with the timing chain. (if not, install again)



EAS00418

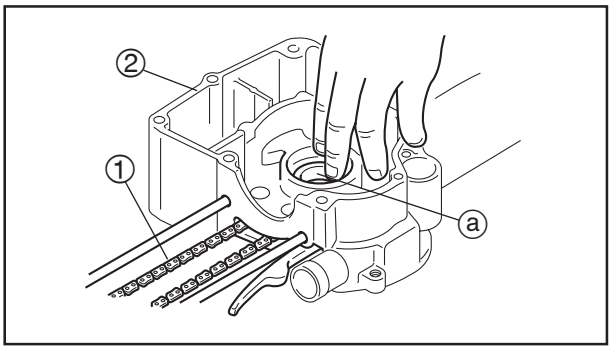
ASSEMBLING THE CRANKCASE

1. Thoroughly clean all the gasket mating surfaces and crankcase mating surfaces.
2. Apply:
   - sealant
     (onto the crankcase mating surfaces)

	Yamaha bond No. 1215 **90890-85505 (ACC-11001-05-01)**

NOTE:

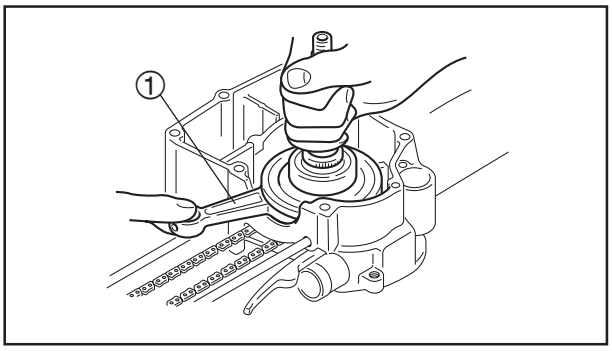
Do not allow any sealant to come into contact with the oil gallery.



3. Install:
   - dowel pins
   - timing chain ①

NOTE:

Install the timing chain so it is not visible through the opening ⓐ in the left crankcase ②.



4. Install:
   - crankshaft ①
   - crankcase (right)
5. Tighten:
   - crankcase

	12 Nm (1.2 m • kg, 8.7 ft • lb)

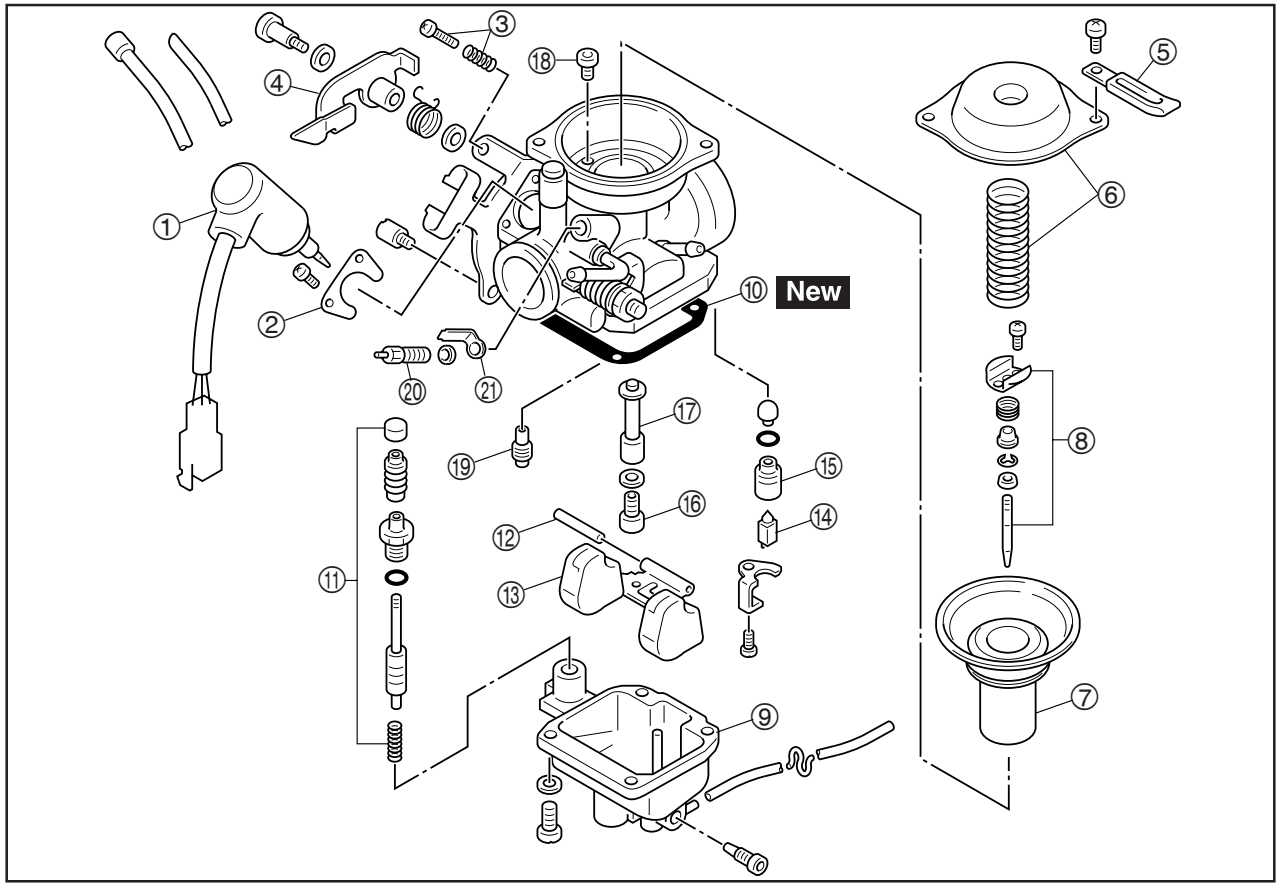
CHAPTER 6
CARBRETOR

CARBURETOR 6-1
CHECKING THE CARBURETOR 6-3
ASSEMBLING THE CARBURETOR 6-5
INSTALLING THE CARBURETOR 6-6
MEASURING AND ADJUSTING THE FUEL LEVEL 6-7
CHECKING THE FUEL COCK 6-8
CHECKING THE AUTOCHOKE UNIT 6-8
AIR INDUCTION SYSTEM 6-10
CHECKING THE AIR INDUCTION SYSTEM 6-11

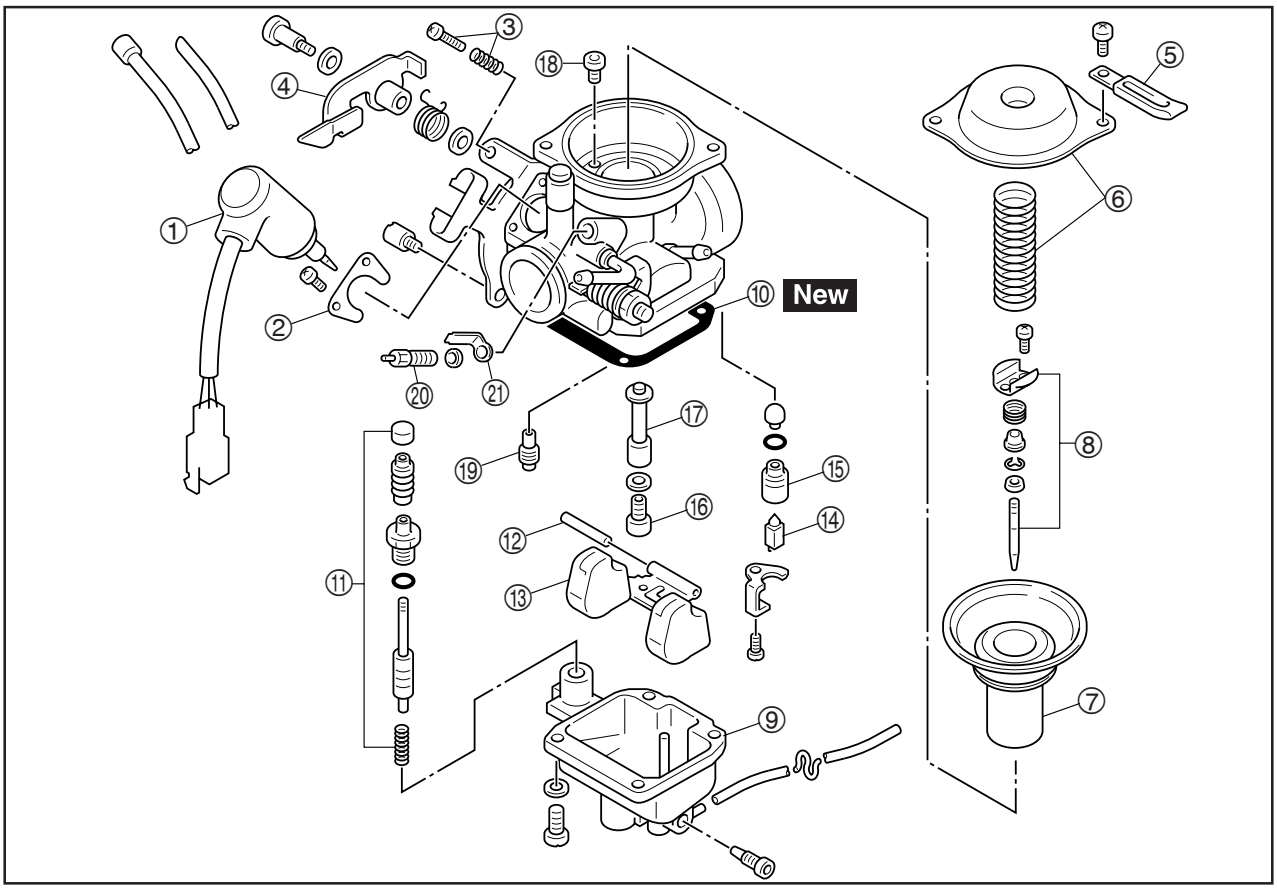
CARBURETOR

EAS00483

CARBURETOR



Order	Job/Part	Q'ty	Remarks
	Disassembling the carburetor		Remove the parts in the order listed.
①	Auto choke unit	1	
②	Auto choke holder	1	
③	Throttle stop screw / Spring	1/1	
④	Bracket	1	
⑤	Clamp	1	
⑥	Vacuum chamber cover / Piston valve spring	1/1	
⑦	Piston valve	1	
⑧	Jet needle kit	1	
⑨	Float chamber	1	
⑩	Gasket	1	
⑪	Accelerator pump assembly	1	
⑫	Float pin	1	
⑬	Float	1	
⑭	Needle valve	1	
⑮	Needle valve seat	1	
⑯	Main jet	1	
⑰	Main nozzle	1	
⑱	Main air jet	1	
⑲	Pilot jet	1	



Order	Job/Part	Q'ty	Remarks
⑳	Carburetor heater	1	
㉑	Ground terminal	1	
			For assembly, reverse the disassembly procedure.

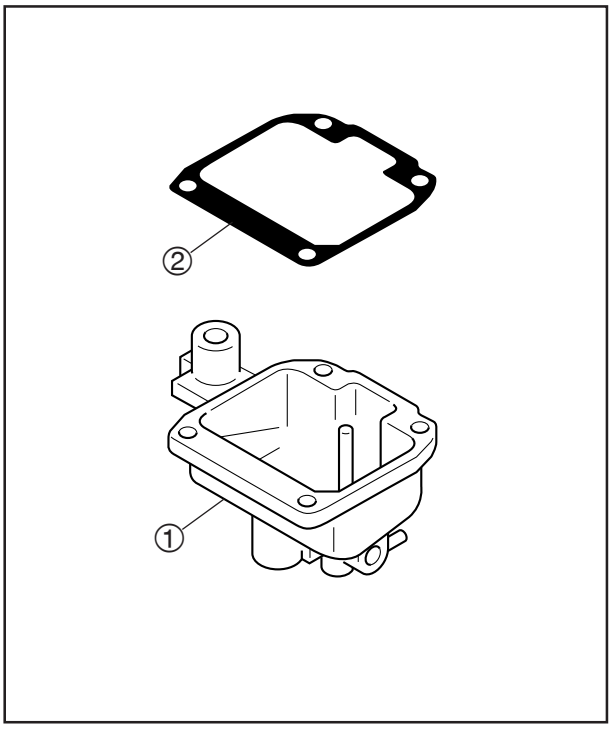
EAS00485
CHECKING THE CARBURETOR

1. Check:
   - carburetor body
   - float chamber
     Cracks/damage → Replace.
2. Check:
   - fuel passages
     Obstruction → Clean.

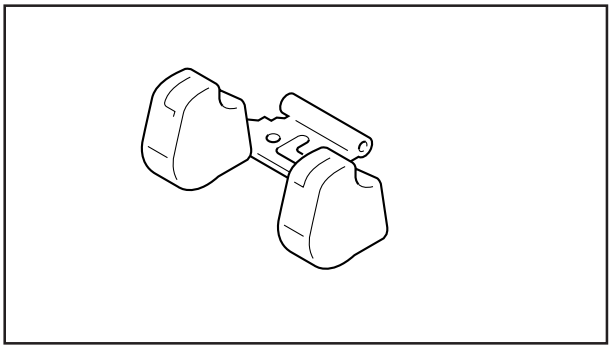
****

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.

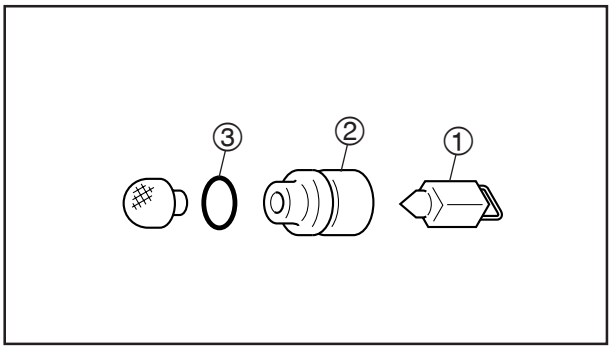
****



3. Check:
   - float chamber body ①
     Dirt → Clean.
4. Check:
   - float chamber rubber gasket ②
     Cracks/damage/wear → Replace.



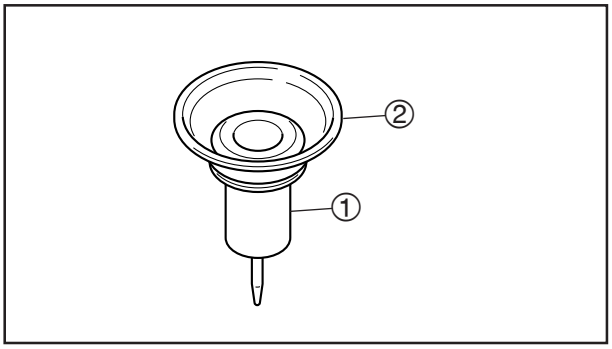
5. Check:
   - float
     Damage → Replace.



6. Check:
   - needle valve ①
   - needle valve seat ②

   Damage/obstruction/wear → Replace the needle valve, needle valve seat and O-ring as a set.
7. Check:
   - O-ring ③

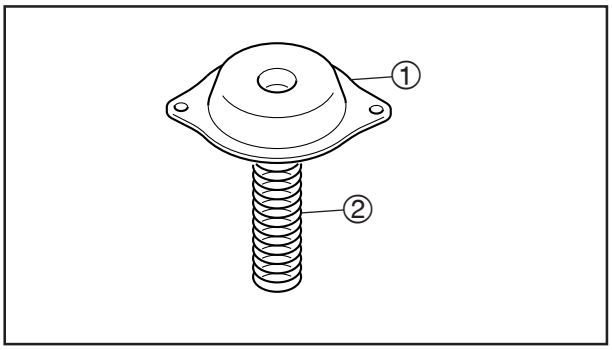
   Damage/wear → Replace the needle valve, needle valve seat and O-ring as a set.



8. Check:
   - piston valve ①

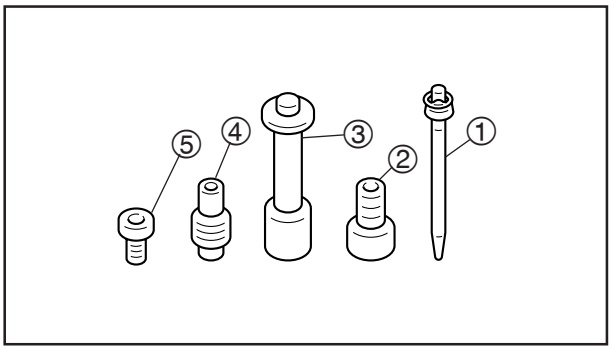
   Damage/scratches/wear→ Replace.
   - piston valve diaphragm ②

   Cracks/tears → Replace.



9. Check:
   - vacuum chamber cover ①
   - piston valve spring ②

   Cracks/damage → Replace.



10. Check:
    - jet needle①
    - main jet②
    - main nozzle③
    - pilot jet④
    - main air jet⑤

    Bends/damage/wear → Replace.
    Obstruction → Clean.
    Blow out the jets with compressed air.
11. Check:
    - piston valve movement

    Insert the piston valve into the carburetor body and move it up and down.
    Tightness → Replace the piston valve.
12. Check:
    - vacuum hoses
    - fuel hoses

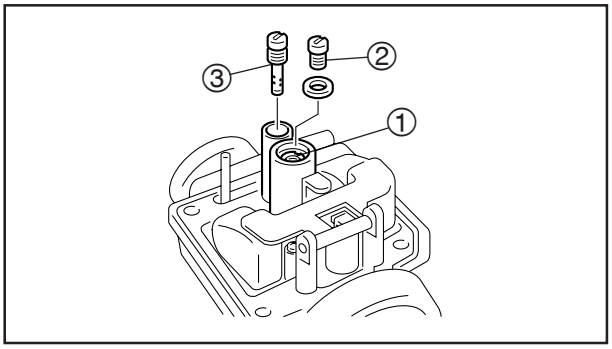
    Cracks/damage/wear → Replace.
    Obstruction → Clean.
    Blow out the hoses with compressed air.

EAS00487

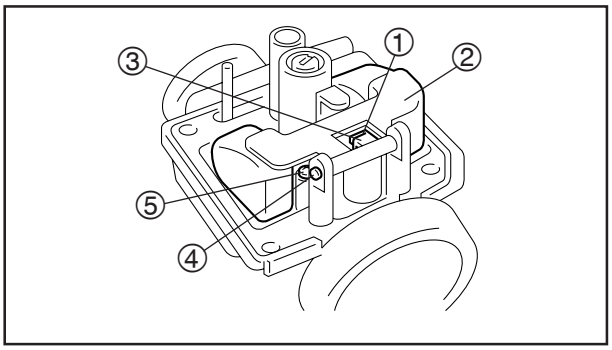
ASSEMBLING THE CARBURETOR

CAUTION:

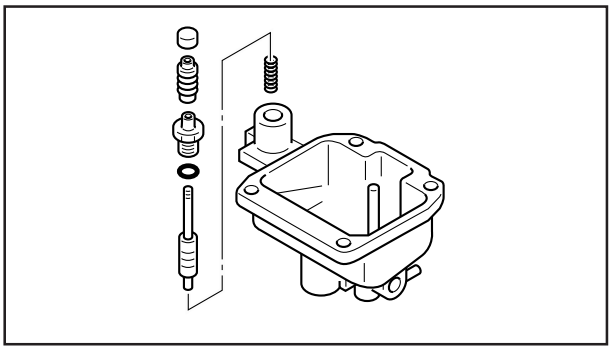
- **Before assembling the carburetor, wash all of the parts in a petroleum-based solvent.**
- **Always use a new gasket.**



1. Install:
   - main nozzle ①
   - main jet ②
   - pilot jet ③



2. Install:
   - needle valve seat ①
   - float ②
   - needle valve ③
   - float pin ④
   - screw ⑤

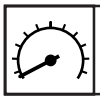


3. Install:
   - accelerator pump assembly

4. Install:
   - piston valve
   - jet needle
   - piston valve spring
   - vacuum chamber cover

EAS00492
INSTALLING THE CARBURETOR

1. Adjust:
   - engine idling speed



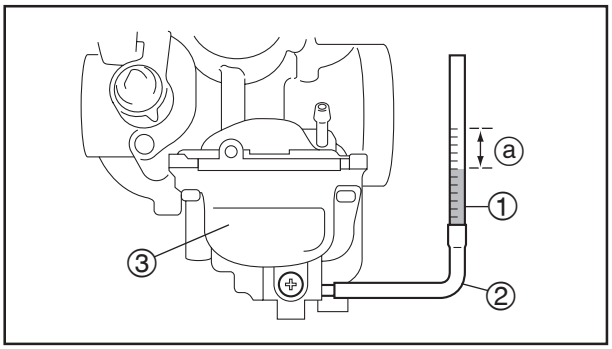
Engine idling speed
1,600 ~ 1,700r/min

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)
3 ~ 5 mm (0.12 ~ 0.20 in)

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



EAS00498

MEASURING AND ADJUSTING THE FUEL LEVEL

1. Measure:
   - fuel level ⓐ

   Out of specification → Adjust.

Fuel level (below the float chamber mating surface)
6.5 ~ 7.5 mm (0.26 ~ 0.30 in)

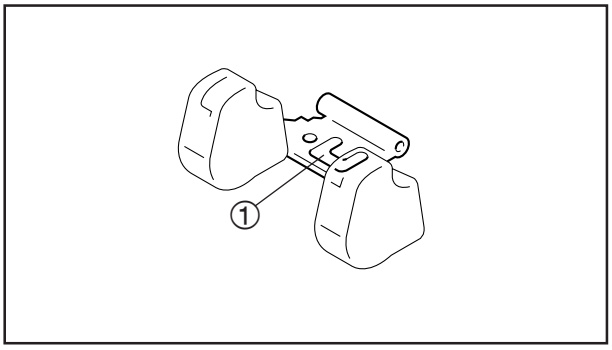
****

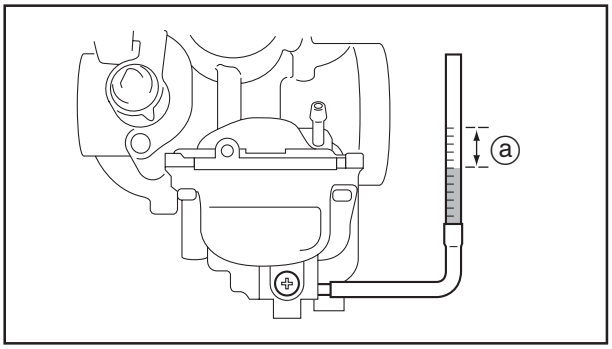
a. Stand the motorcycle on a level surface.
b. Place the motorcycle on a suitable stand to ensure that the motorcycle is standing straight up.
c. Install the fuel level gauge ① onto the fuel drain pipe ②

Fuel level gauge
90890-01312 (YM-01312-A)

d. Loosen the fuel drain screw
e. Hold the fuel level gauge vertically next to the float chamber ③.
f. Measure the fuel level ⓐ.

****





2. Adjust:
   - fuel level

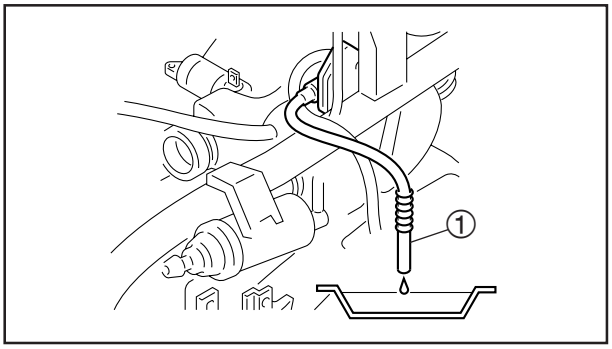
****

a. Remove the carburetor.
b. Check the needle valve seat and needle valve.
c. If either is worn, replace them as a set.
d. If both are fine, adjust the float level by slightly bending the float tang ①.
e. Install the carburetor.
f. Measure the fuel level ⓐ again.
g. Repeat steps (a) to (f) until the fuel level is within specification.

****

EAS00505
CHECKING THE FUEL COCK

1. Check:
   - ●fuel cock
     Cracks/damage/wear → Replace.

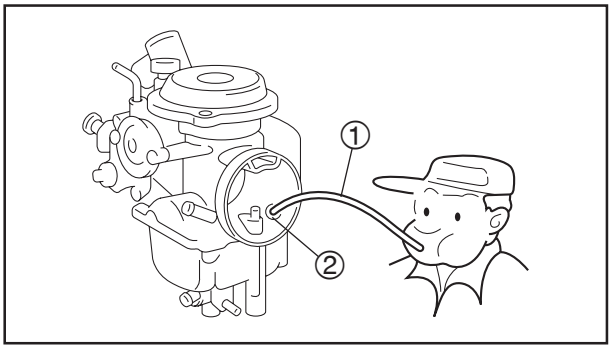


2. Check:
   - ●fuel cock strainer ①
     obstruction → clean.
     Blow out the jets with compressed air.
     Damage → Replace.

EAS00503
CHECKING THE AUTOCHOKE UNIT

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

1. Remove:
   - ●carburetor



2. Check:
   - ●autochoke unit

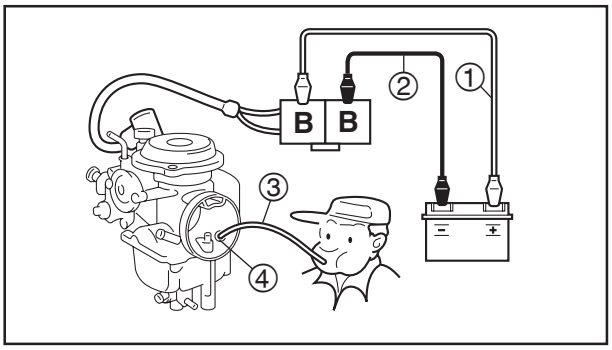
****

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 unit.

****



3. Check:
   ● autochoke unit

****

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

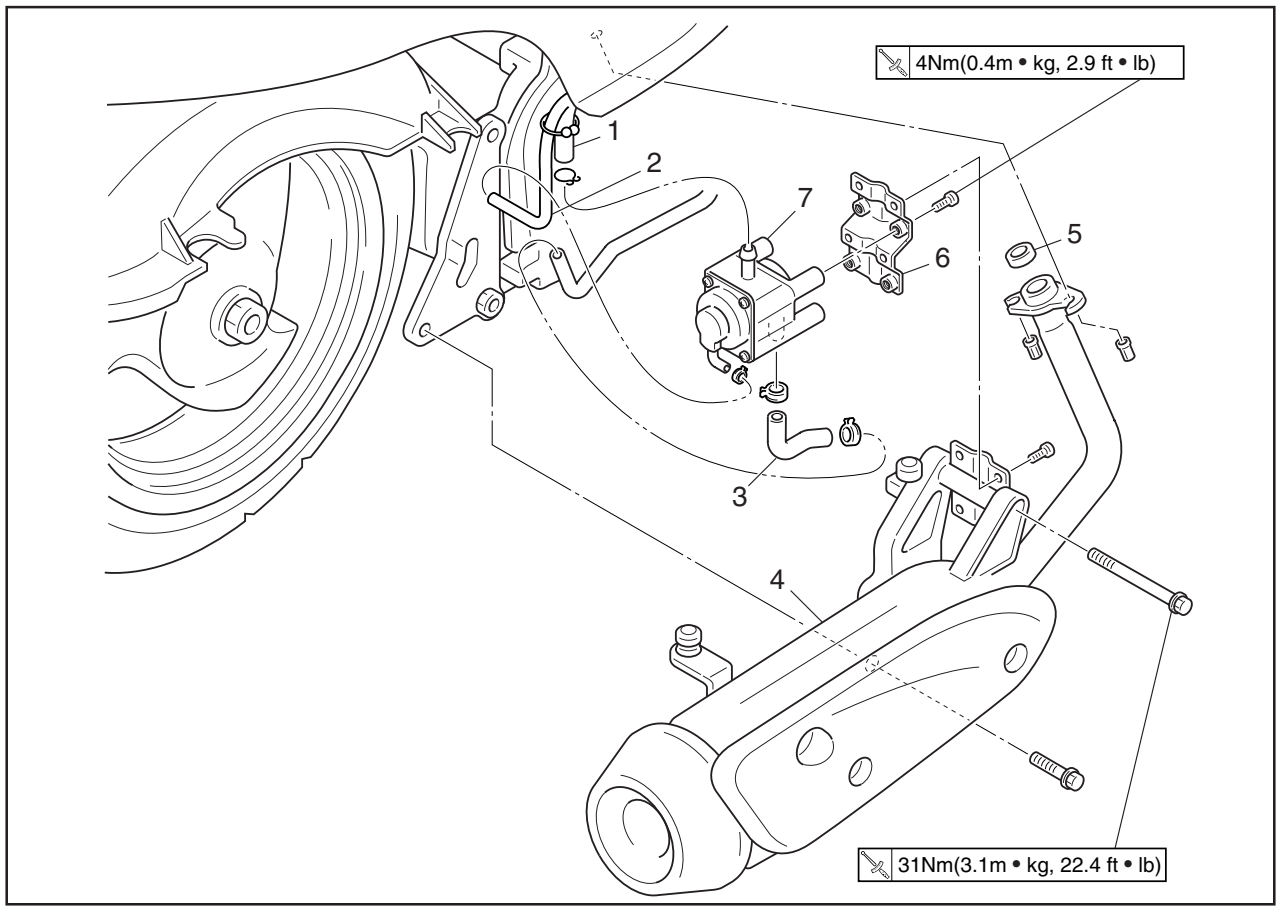
Positive battery lead ① → black Negative battery lead ② → black

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 unit. Starter plunger closes. Autochoke is OK.

****

AIR INDUCTION SYSTEM

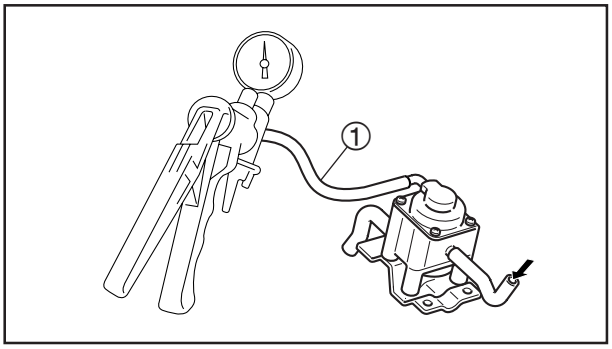


Order	Job/Part	Q'ty	Remarks
	Removing the air induction system		Remove the parts in the order listed.
1	Hose (from AI air filter)	1	
2	Vacuum hose(from mainfold)	1	
3	Hose (to cylinder head)	1	
4	Muffler assembly	1	
5	Gasket	1	
6	Air cut-off valve bracket	1	
7	Air cut-off valve assembly	1	
			For installation, reverse the removal procedure.

EAS00510

CHECKING THE AIR INDUCTION SYSTEM

1. Check:
   - hoses
     Loose connection → Connect properly.
     Cracks/damage → Replace.
   - pipe
     Cracks/damage → Replace.



2. Check:
   - air cut-off valve
     Cracks/damage → Replace.

NOTE:

When the negative pressure is applied to the part ①, check that the continuity in the direction of arrow mark is completely lost. If the negative pressure is not loaded, the continuity can be obtained.

CHAPTER 7
ELECTRICAL

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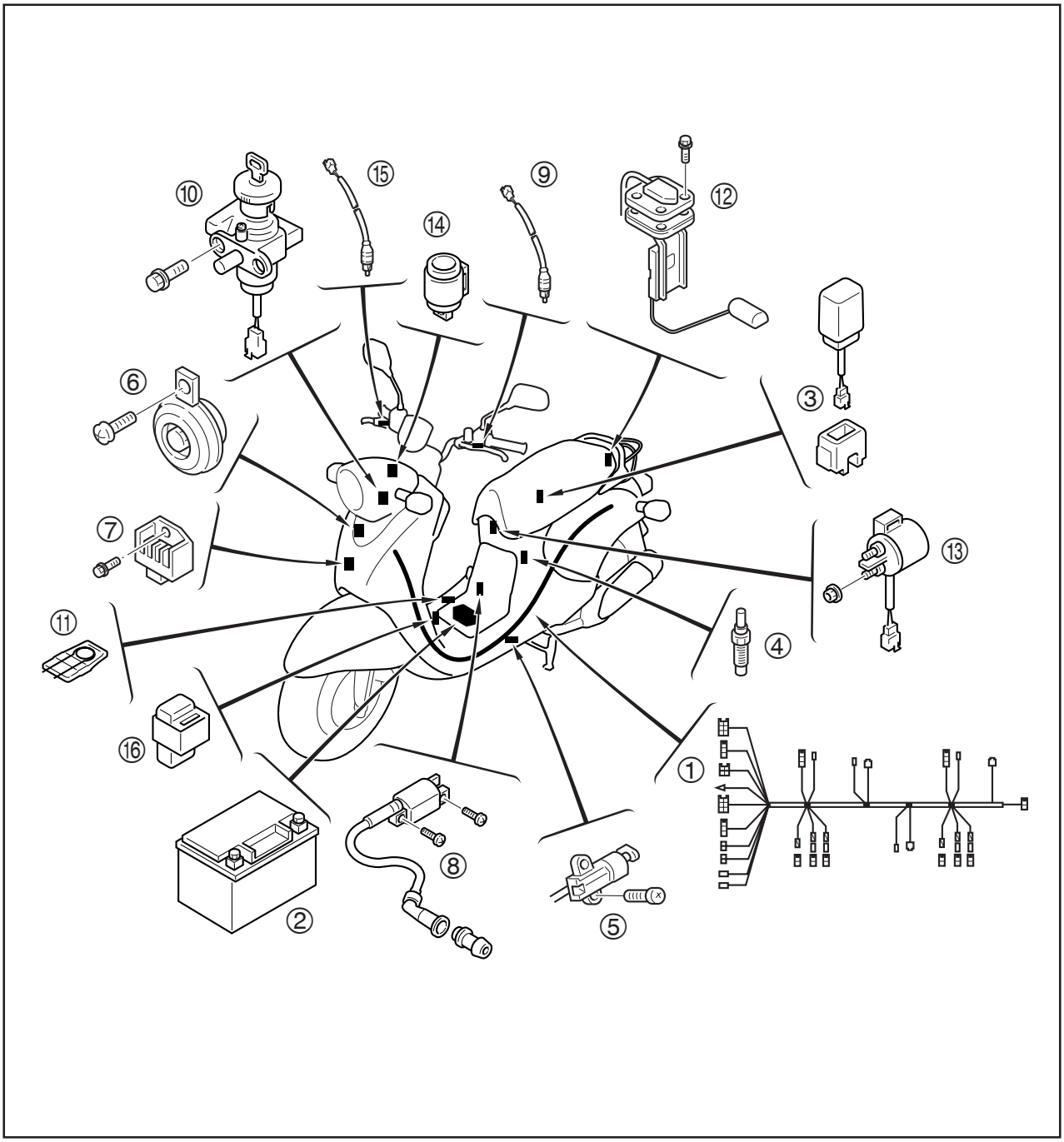
EAS00729

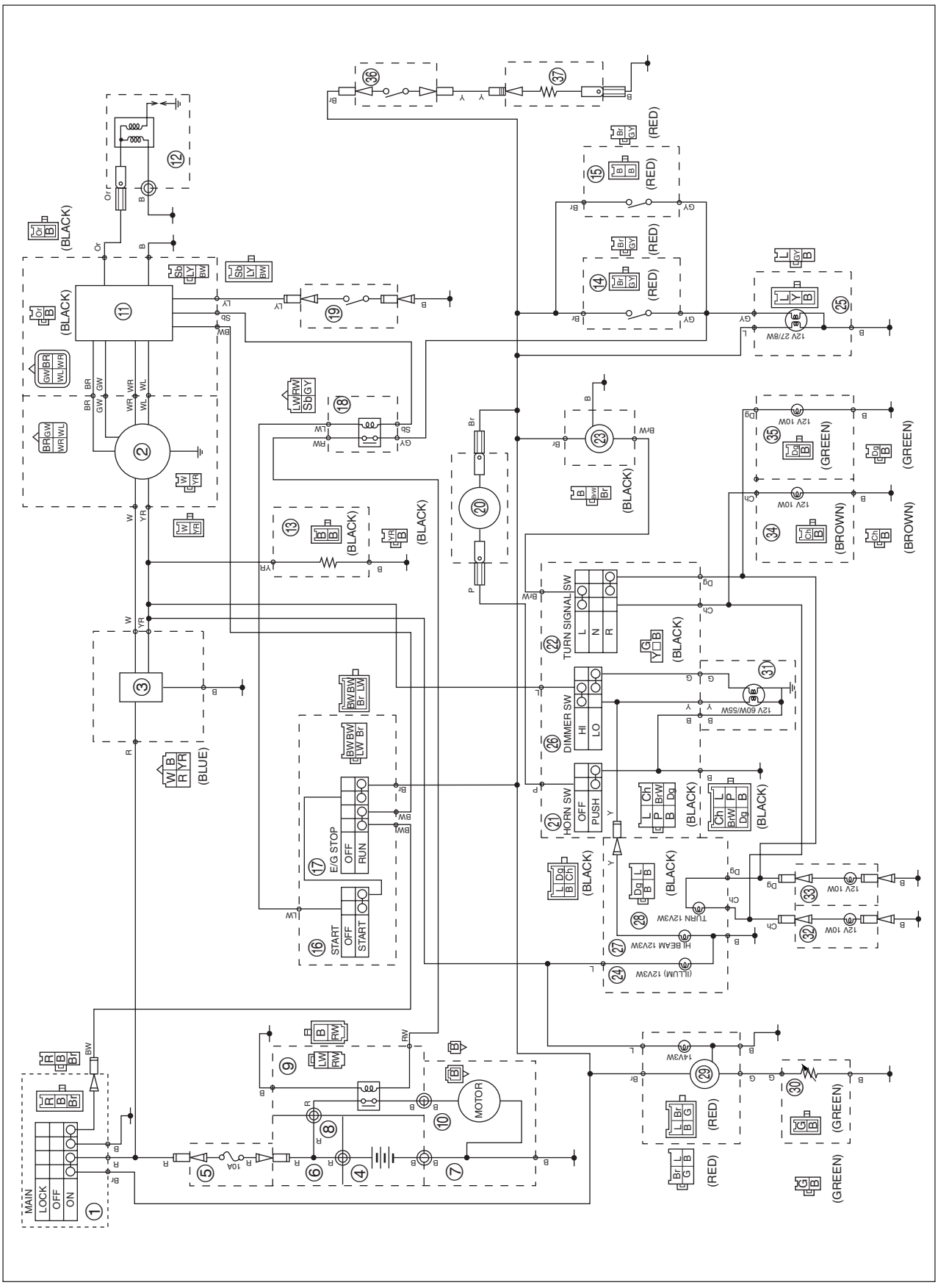
ELECTRICAL

ELECTRICAL COMPONENTS

① Wire harness
② Battery
③ C.D.I. unit
④ Carburetor heater
⑤ Sidestand switch
⑥ Horn
⑦ Rectifier/Regulator
⑧ Ignition coil
⑨ Rear brake light switch
⑩ Main switch
⑪ Thermo switch
⑫ Fuel sender
⑬ Starter relay
⑭ Turn signal relay
⑮ Front brake light switch
⑯ Starting circuit cut-off relay

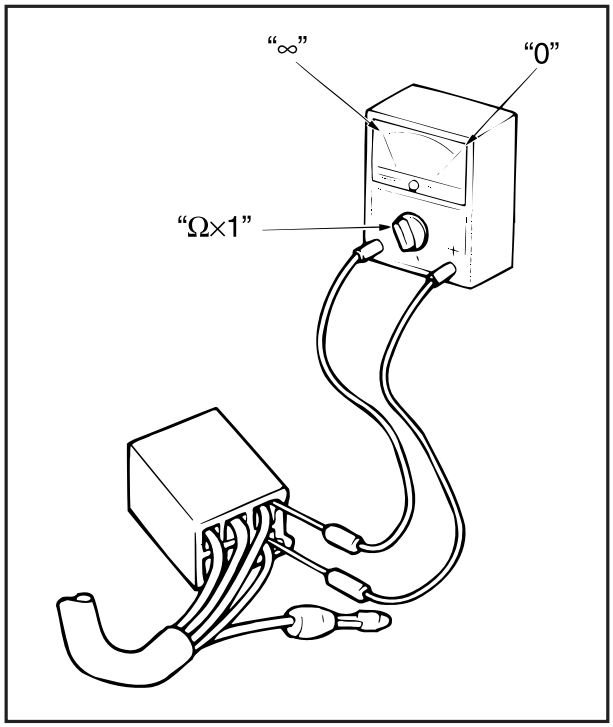


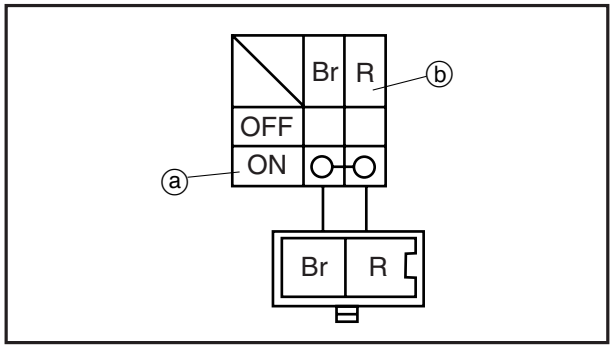
WIRING DIAGRAM



① Main switch
② C.D.I. magneto
③ Rectifier/Regulator
④ Battery
⑤ Main fuse
⑥ Battery (+) lead
⑦ Battery (-) lead
⑧ Wire lead
⑨ Starter relay
⑩ Starter motor
⑪ C.D.I. unit
⑫ Ignition coil
⑬ Auto choke unit
⑭ Front brake light switch
⑮ Rear brake light switch
⑯ Start switch
⑰ Engine stop switch
⑱ Starting circuit cut-off relay
⑲ Sidestand switch
⑳ Horn
㉑ Horn switch
㉒ Turn signal switch
㉓ Turn signal relay
㉔ Speedometer light
㉕ Tail/brake light
㉖ Dimmer switch
㉗ High beam indicator light
㉘ Turn signal indicator light
㉙ Fuel lever meter
㉚ Fuel sender
㉛ Headlight
㉜ Front turn signal light (left)
㉝ Front turn signal light (right)
㉞ Rear turn signal light (left)
㉟ Rear turn signal light (right)
㊱ Thermo switch
㊲ Carburetor heater

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





EAS00730

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. Always insert the probes from the opposite end of the coupler, taking care not to loosen or damage the leads.

Pocket tester
90890-03132 (YU-03112-C)

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 ⓐ are shown in the far left column and the switch lead colors ⓑ 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).

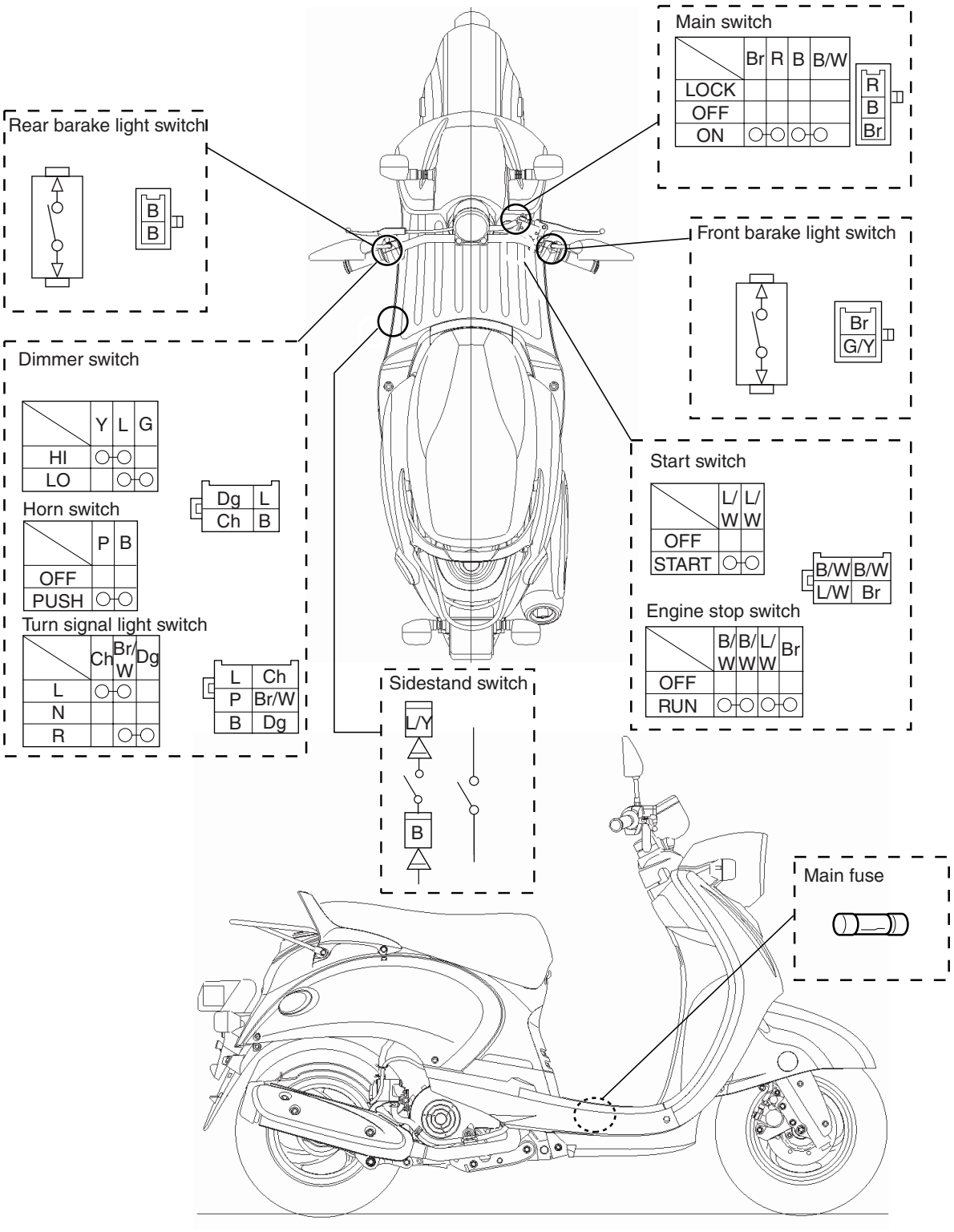
The example illustration on the left shows that:
There is continuity between red and brown when the switch is set to "ON".

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.



EAS00733

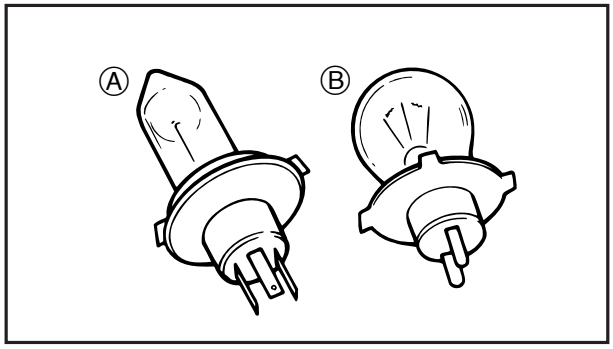
CHECKING THE BULBS AND BULB SOCKETS

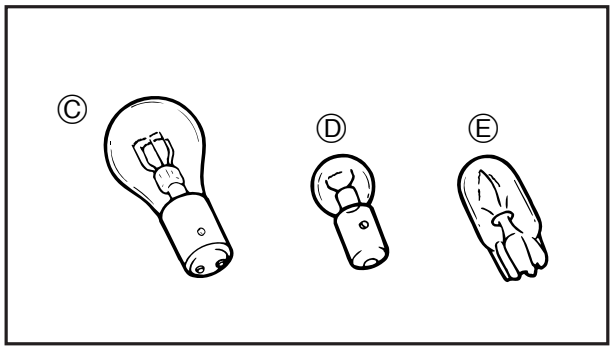
Check each bulb and bulb socket for damage or wear, proper connections, and also for continuity between the terminals.

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 Ⓐ and Ⓑ 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 Ⓒ is used for turn signal and tail/brake lights and can be removed from the socket by pushing and turning the bulb counterclockwise.
- Bulbs Ⓓ and Ⓔ 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:

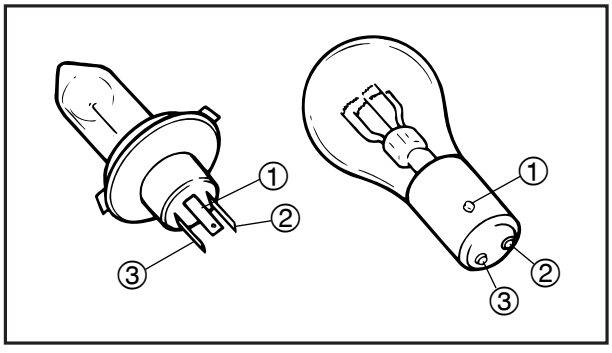
- **Be sure to hold the socket firmly when removing the bulb. Never pull the lead, otherwise it may be pulled out of the terminal in the coupler.**
- **Avoid touching the glass part of the headlight bulb to keep it free from oil, otherwise the transparency of the glass, the life of the bulb, and the 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.

Pocket tester
90890-03132 (YU-03112-C)

NOTE:

Before checking for continuity, set the pocket tester to "0" and to the "Ω × 1" range.



****

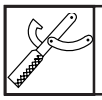
a. Connect the positive tester probe to terminal ① and the negative tester probe to terminal ②, and check the continuity.
b. Connect the positive tester probe to terminal ① and the negative tester probe to terminal ③, and check the continuity.
c. If either of the readings indicate no continuity, replace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



Pocket tester
90890-03132 (YU-03112-C)

NOTE:

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

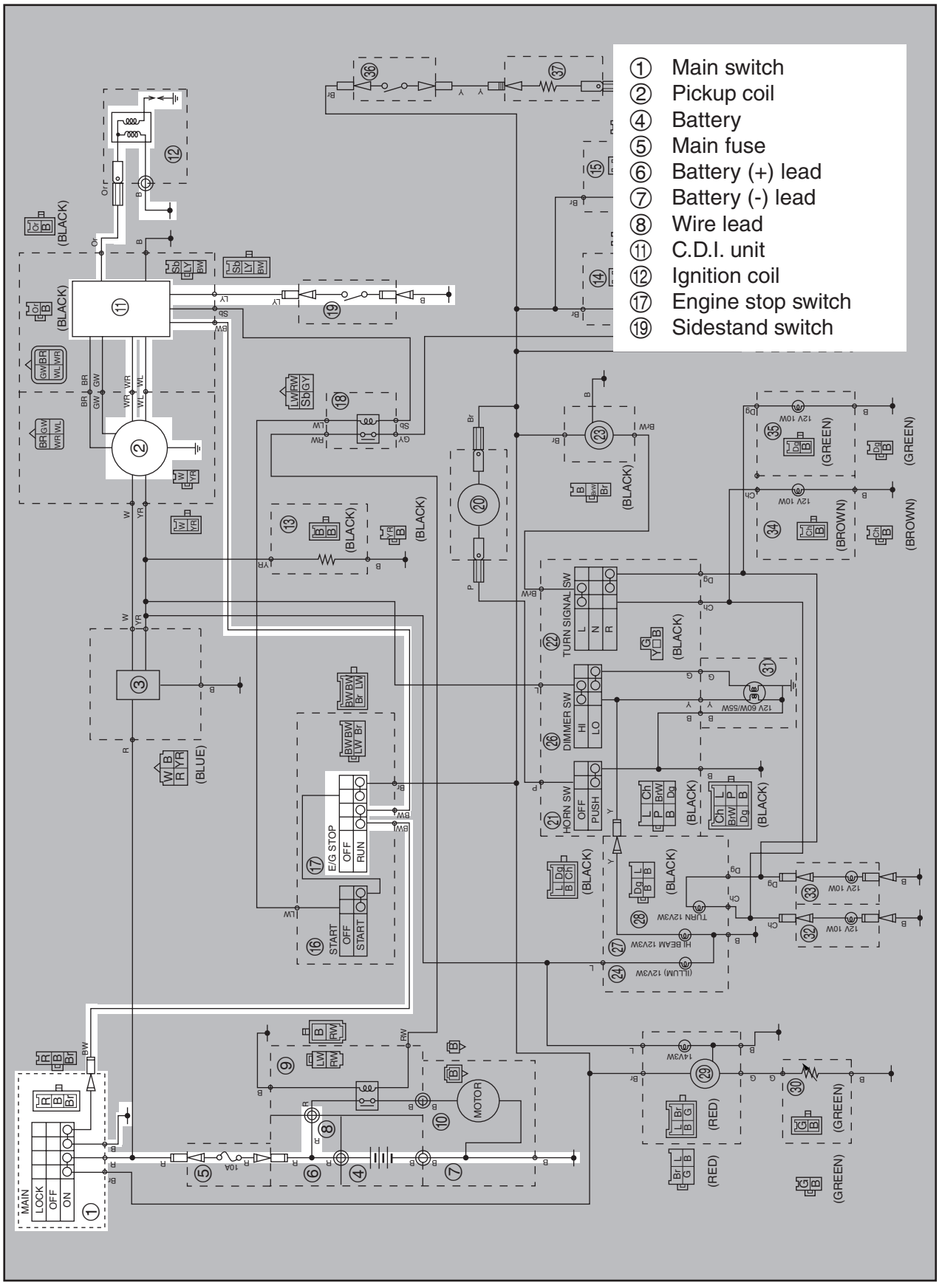
****

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.

****

IGNITION SYSTEM

CIRCUIT DIAGRAM



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. Main switch
8. Engine stop switch
9. Sidestand switch
10. Pickup coil resistance
11. Wiring connections (of the entire ignition system)

NOTE:
- Before troubleshooting, remove the following part(s):

1. Head light cover
2. Front turn signal light bracket
3. Leg shield 1
4. Rear carrier
5. Side cover (right)
6. Cover
7. Battery cover

- Troubleshoot with the following special tool(s).

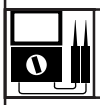
Ignition checker
90890-06754 (YM-34487)
Pocket tester
90890-03132 (YU-03112-C)

EAS00738
1. Main Fuse
- Check the fuse for continuity.
  Refer to "CHECKING THE FUSE" in chapter 3.
- Is the fuse OK?

YES → NO

Replace the 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

- 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.

Standard spark plug
CR7E (NGK)
Spark plug gap
0.7 ~ 0.8 mm(0.028 ~ 0.032 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.

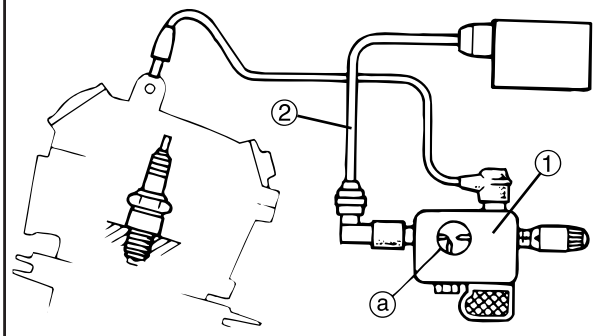
EAS00742

4. Ignition spark gap

- Disconnect the spark plug cap from the spark plug.
- Connect the ignition checker ① as shown.

② Spark plug cap

- Set the main switch to "ON".
- Measure the ignition spark gap ⓐ.
- Crank the engine by pushing the starter switch and gradually increase the spark gap until a misfire occurs.



Minimum ignition spark gap
6 mm(0.24 in)

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

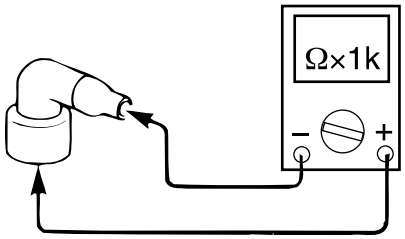
NO → The ignition system is OK.

YES

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
8~12 kΩ at 20°C

- Is the spark plug cap OK?

YES

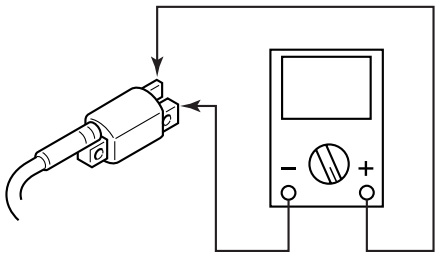
NO → Replace the spark plug cap.

EAS00746

6. Ignition coil resistance

- Disconnect the ignition coil connectors from the ignition coil terminals.
- Connect the pocket tester (Ω × 1) to the ignition coil as shown.

Positive tester probe → orange
Negative tester probe → black

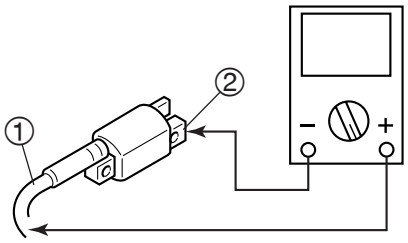


● Measure the primary coil resistance.

Primary coil resistance
0.184 ~ 0.276 Ω at 20°C

● Connect the pocket tester (Ω × 1k) to the ignition coil as shown.

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



● Measure the secondary coil resistance.

Secondary coil resistance
6.32 ~ 9.48 kΩ at 20°C

● Is the ignition coil OK?

YES

NO

Replace the ignition coil.

EAS00749

7. 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

8. Engine stop switch

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

YES

NO

Replace the right handlebar switch.

EAS00752

9. Sidestand switch

● Check the sidestand switch for continuity.
Refer to "CHECKING THE SWITCHES".
● Is the sidestand switch OK?

YES

NO

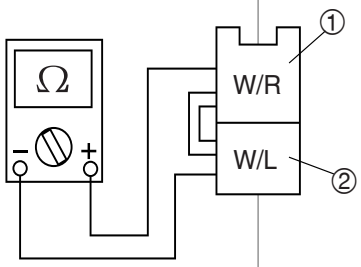
Replace the sidestand switch.

EAS00748

10. Pickup coil resistance

- Disconnect the pickup coil coupler from the wire harness.
- Connect the pocket tester (Ω × 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
304 ~456Ω at 20°C

- Is the pickup coil OK?

YES → NO

Replace the pickup coil.

EAS00754

11. Wiring

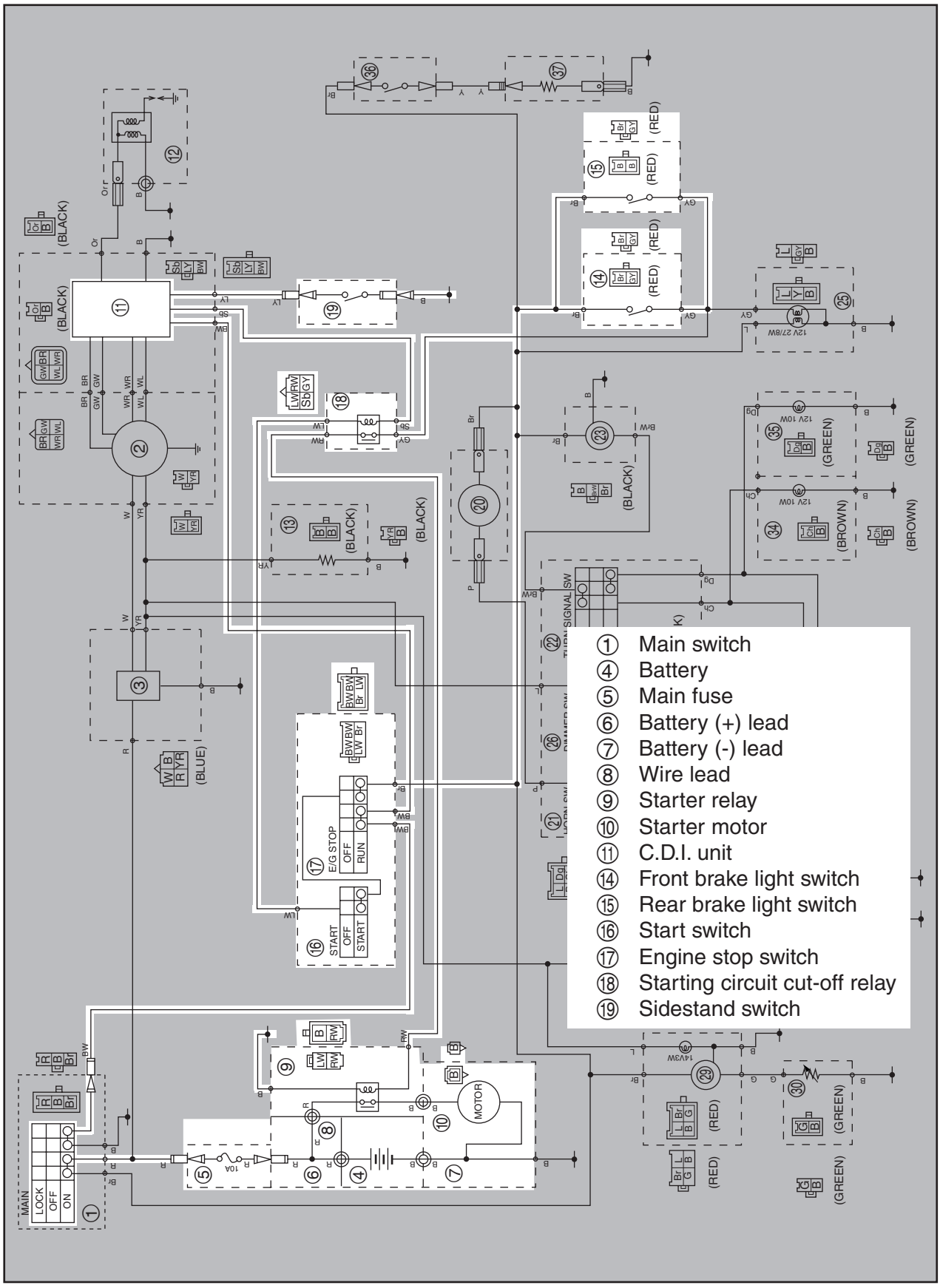
- Check the entire ignition system's wiring. Refer to "CIRCUIT DIAGRAM".
- Is the ignition system's wiring properly connected and without defects?

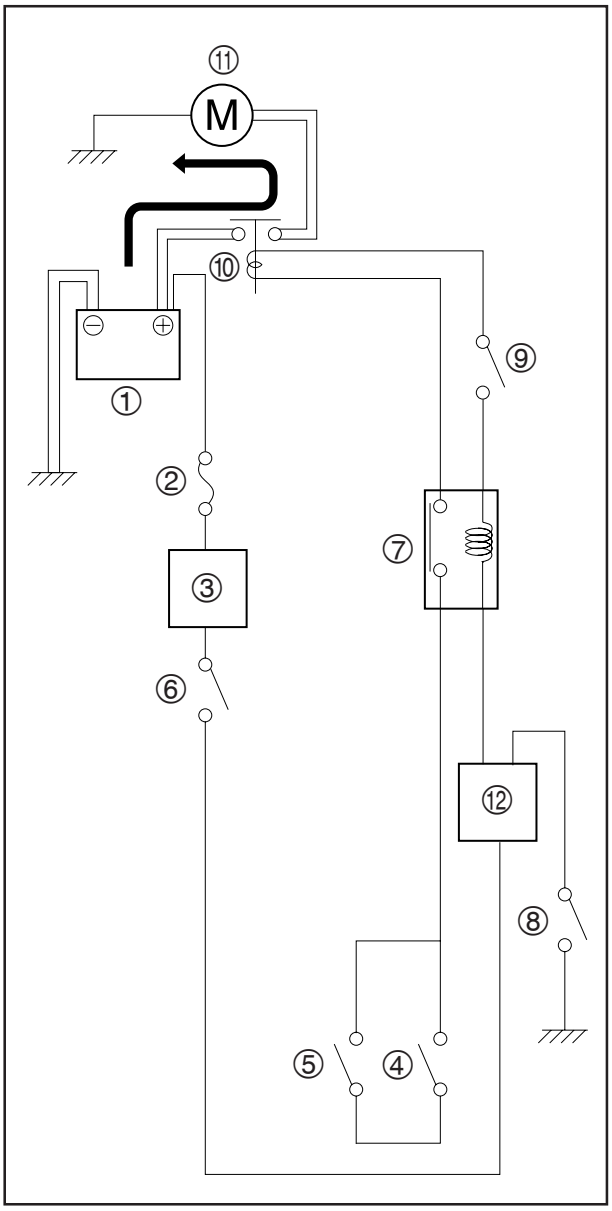
YES → Replace the C.D.I. unit.

NO → Properly connect or repair the ignition system's wiring.

ELECTRIC STARTING SYSTEM

CIRCUIT DIAGRAM





EAS00756

STARTING CIRCUIT CUT-OFF SYSTEM OPERATION

If the main switch is set to “ON” (switchis closed), the starter motor can only operate if at least one of the following conditions is met:

- The sidesatnd switch is up (the side stand switch is closed), and the brake lever (front or rear) is pulled to the handlebar (the brake light switch is closed)

① Battery
② Main fuse
③ Main switch
④ Front brake light switch
⑤ Rear brake light switch
⑥ Engine stop switch
⑦ Starting circuit cut-off relay
⑧ Sidestand switch
⑨ Start switch
⑩ Starter relay
⑪ Starter motor
⑫ C.D.I. unit

EAS00757
TROUBLESHOOTING

The starter motor fails to turn.

Check:
1. Main fuse
2. Battery
3. Starter motor
4. Starting circuit cut-off relay
5. Starter relay
6. Main switch
7. Brake light switch (front, rear)
8. Engine stop switch
9. Sidestand switch
10. Start switch
11. Wiring connections
    (of the entire starting system)

NOTE:
- Before troubleshooting, remove the following part(s):

1. Head light cover
2. Front turn signal light bracket
3. Leg shield 1
4. Rear carrier
5. Side cover (right)
6. Cover
7. Battery cover

- Troubleshoot with the following special tool(s).

Pocket tester
90890-03132 (YU-03112-C)

EAS00738

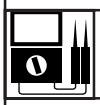
1. Main fuse
- Check the fuse for continuity.
  Refer to “CHECKING THE FUSE” in chapter 3.
- Is the fuse OK?

YES ⇩ NO ⇩

Replace the 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

- Is the battery OK?

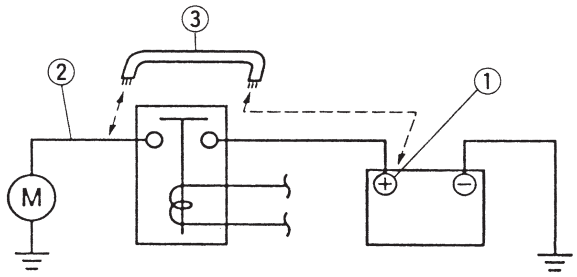
YES ⇩ NO ⇩

- 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 lead③.



⚠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?

YES ⇩

NO ⇩

Repair or replace the starter motor.

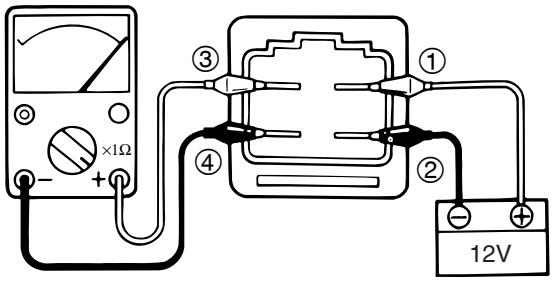
EAS00759

4. Starting circuit cut-off relay

●Disconnect the starting circuit cut-off relay coupler from the wire harness.

●Connect the pocket tester (Ω × 1) and battery (12 V) to the starting circuit cut-off relay coupler as shown.

Positive battery terminal → red/white ①
Negative battery terminal → blue/white ②
Positive tester probe → green/yellow ③
Negative tester probe → sky blue ④



●Does the starting circuit cut-off relay have continuity between green/yellow③ and sky blue④?

YES ⇩

NO ⇩

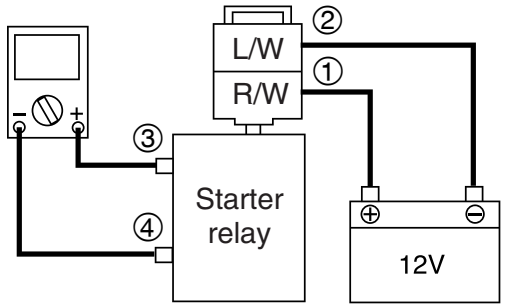
Replace the starting circuit cut-off relay.

EAS00761

5. Starter relay

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

Positive battery terminal → red/white ①
Negative battery terminal → blue/white ②
Positive tester probe → red ③
Negative tester probe →red ④



- Does the starter relay have continuity between red③ and red ④?

YES → Replace the starter relay.

NO

EAS00749

6. Main switch

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

YES → NO → Replace the main switch.

EAS00751

7. Brake light switch(front and rear)

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

YES

NO → Replace the brake light switch.

EAS00750

8. 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.

EAS00752

9. Sidestand switch

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

YES

NO → Replace the sidestand switch.

EAS00764

10. 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.

EAS00766

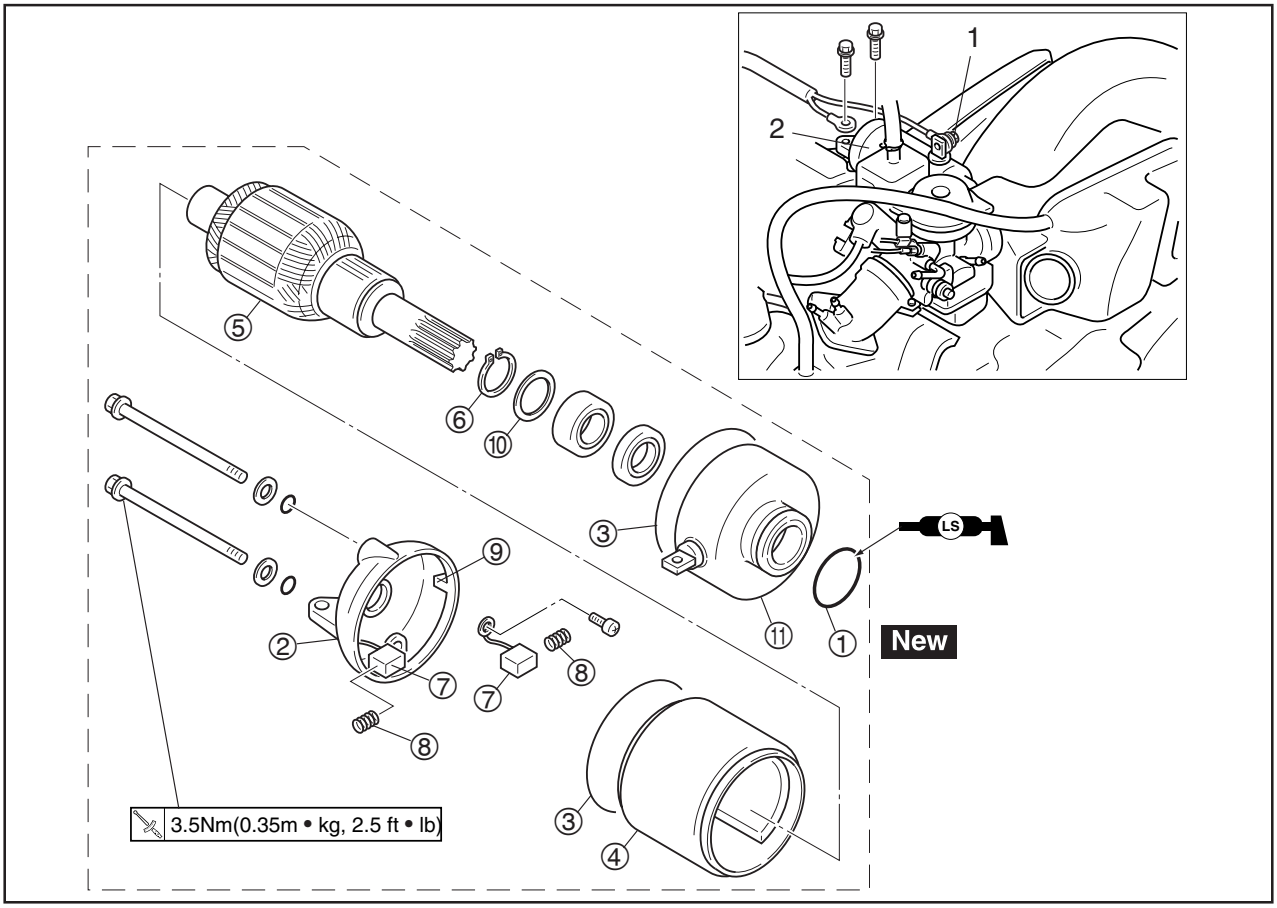
11. Wiring

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

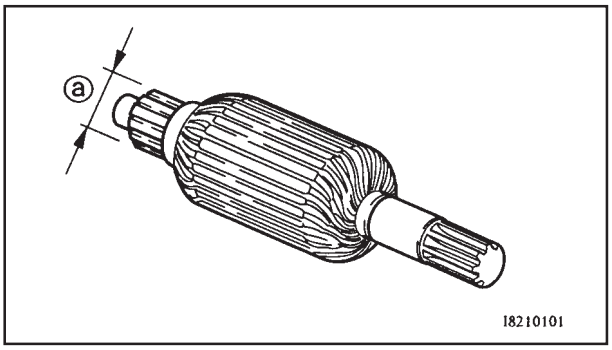
YES ⇩ The starting system circuit is OK.

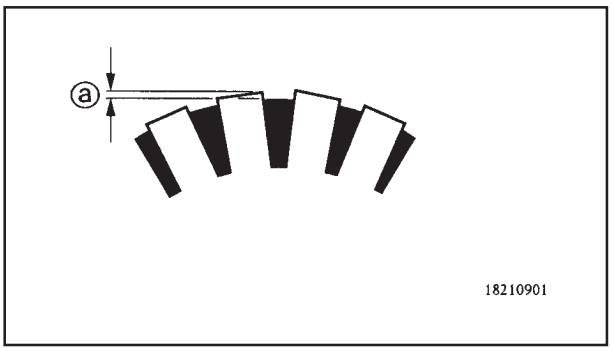
NO ⇩ Properly connect or repair the starting system's wiring or replace the C.D.I. unit.

STARTER MOTOR



Order	Job/Part	Q'ty	Remarks
	Starter motor removal		Remove the parts in the order listed.
	Air filter case		Refer to"LEADS, HOSES AND REAR BRAKE "in chapter 5.
1	Starter motor lead	1	
2	Starter motor	1	
			For installation, reverse the removal procedure.
	Starter motor disassembly		Remove the parts in the order listed.
①	O-ring	1	
②	Rear bracket	1	
③	Gasket	2	
④	Stator assembly	1	
⑤	Armature coil	1	
⑥	Circlip	1	
⑦	Brush	2	
⑧	Brush spring	2	
⑨	Brush seat	1	
⑩	Plate washer	1	
⑪	Front bracket	1	
			For assembly, reverse the disassembly procedure.





EAS00769
CHECKING THE STARTER MOTOR

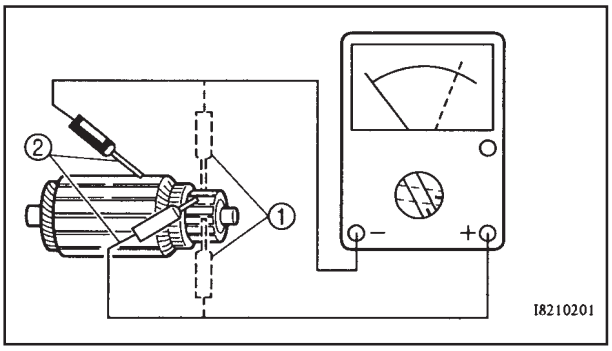
1. Check:
   - commutator
     Dirt → Clean with 600-grit sandpaper.
2. Measure:
   - commutator diameter ⓐ
     Out of specification → Replace the starter motor.

Commutator wear limit
21 mm (0.83 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
1.5 mm (0.06 in)

NOTE:
The mica of the commutator 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.

****

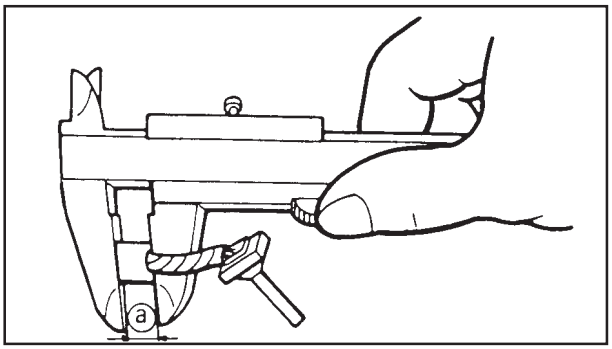
a. Measure the armature assembly resistances with the pocket tester.

Pocket tester
90890-03132 (YU-03112-C)

Armature coil
Commutator resistance ①
0.0306 ~ 0.0374 Ω at 20°C
Insulation resistance ②
Above 1 MΩ at 20°C

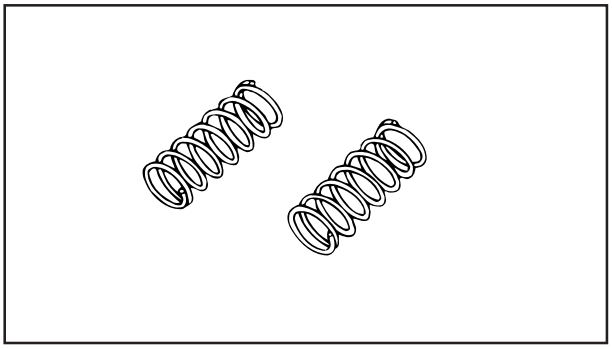
b. If any resistance is out of specification, replace the starter motor.

****



5. Measure:
   - brush length ⓐ
     Out of specification → Replace the brushes as a set.

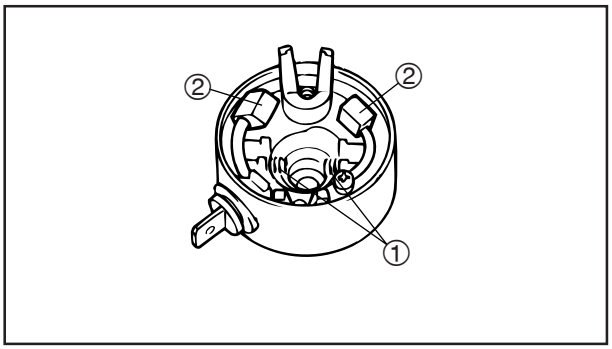
Brush length wear limit
3.5 mm (0.14 in)



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

Brush spring force
5.52 ~ 8.28 N

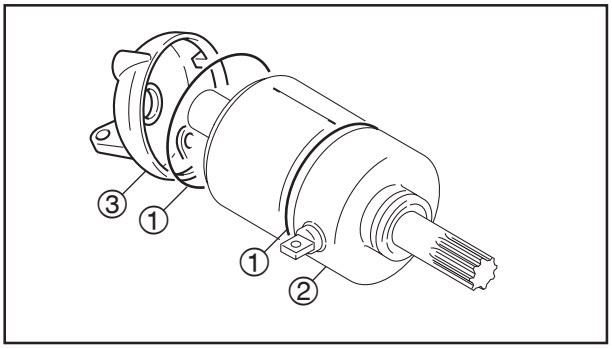
7. Check:
   - gear teeth
     Damage/wear → Replace the gear.



EAS00772

ASSEMBLING THE STARTER MOTOR

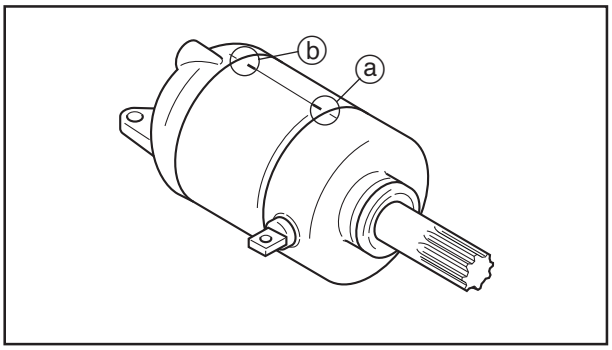
1. Install:
   - brush spring ①
   - brush ②
   - armature coil

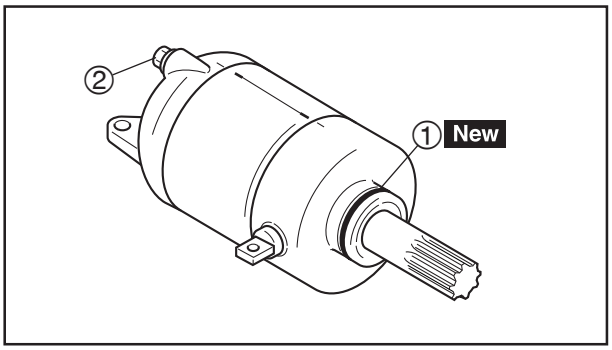


2. Install:
   - gasket ①
   - starter motor front bracket ②
   - starter motor rear bracket ③

NOTE:

Align the match marks ⓐ on the starter motor yoke with the match marks ⓑ on the front and starter motor rear brackets.





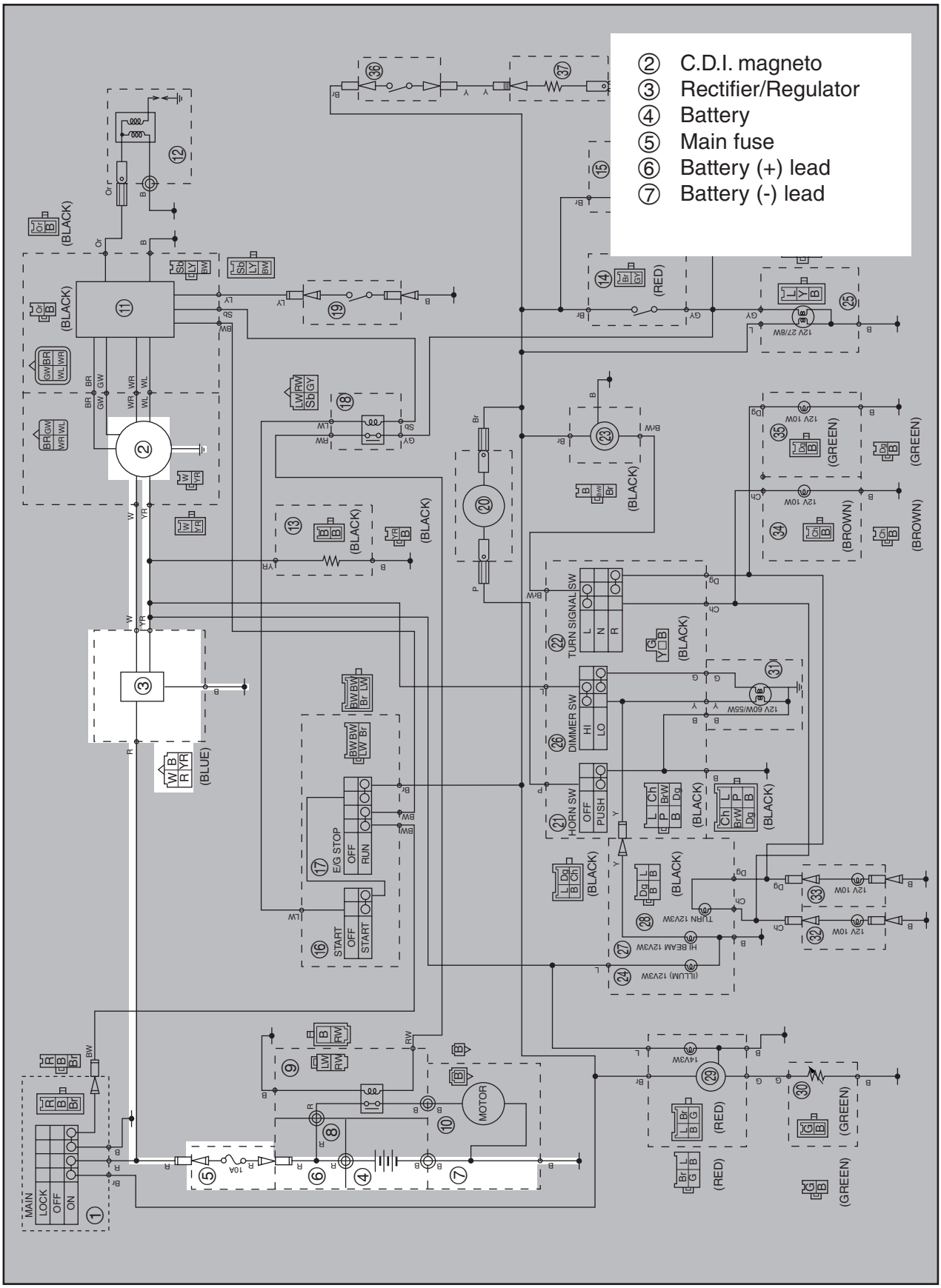
3 . Install:
   - O-ring New ①
   - washer
   - bolts ②

	3.5 Nm (0.35 m • kg, 2.5 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. stator coil resistance
5. wiring connections
   (of the entire charging system)

NOTE:
- Before troubleshooting, remove the following part(s):

1. Rear carrier
2. Side cover (right)
3. Cover
4. Battery cover
   - Troubleshoot with the following special tool(s).

Engine tachometer
90890-03113 (YU-08036-C)
Pocket tester
90890-03132 (YU-03112-C)

EAS00738
1. Main fuse
   - Check the fuse for continuity.
     Refer to “CHECKING THE FUSE” in chapter 3.
   - Is the fuse OK?

YES → NO

Replace the 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

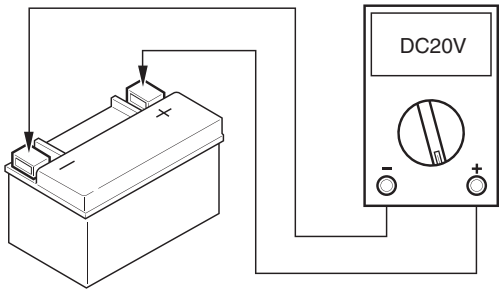
- Is the battery OK?

YES → NO

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

EAS00775
3. Charging voltage
   - Connect the engine tachometer to the spark plug lead of cylinder.
   - Connect the pocket tester (DC 20 V) to the battery as shown.

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



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

Charging voltage
14 V at 5000r/min

NOTE:
Make sure the battery is fully charged.

- Is the charging voltage within specification?

YES ⇩ NO ⇩

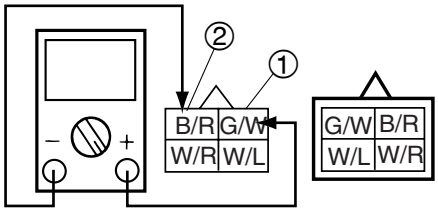
The charging circuit is OK.

EAS00776

4. Stator coil resistance

- Remove the C.D.I magneto couplers from wireharness.
- Connect the pocket tester ($\Omega \times 1$) to the stator coils as shown.

Positive tester probe →green/ white ①
Negative tester probe → black/red ②



- Measure the stator coil resistances.

Stator coil resistance
688 ~ 1032 Ω at 20°C

- Is the stator coil OK?

YES ⇩ NO ⇩

Replace the stator coil assembly.

EAS00754

5. Wiring

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

YES ⇩ NO ⇩

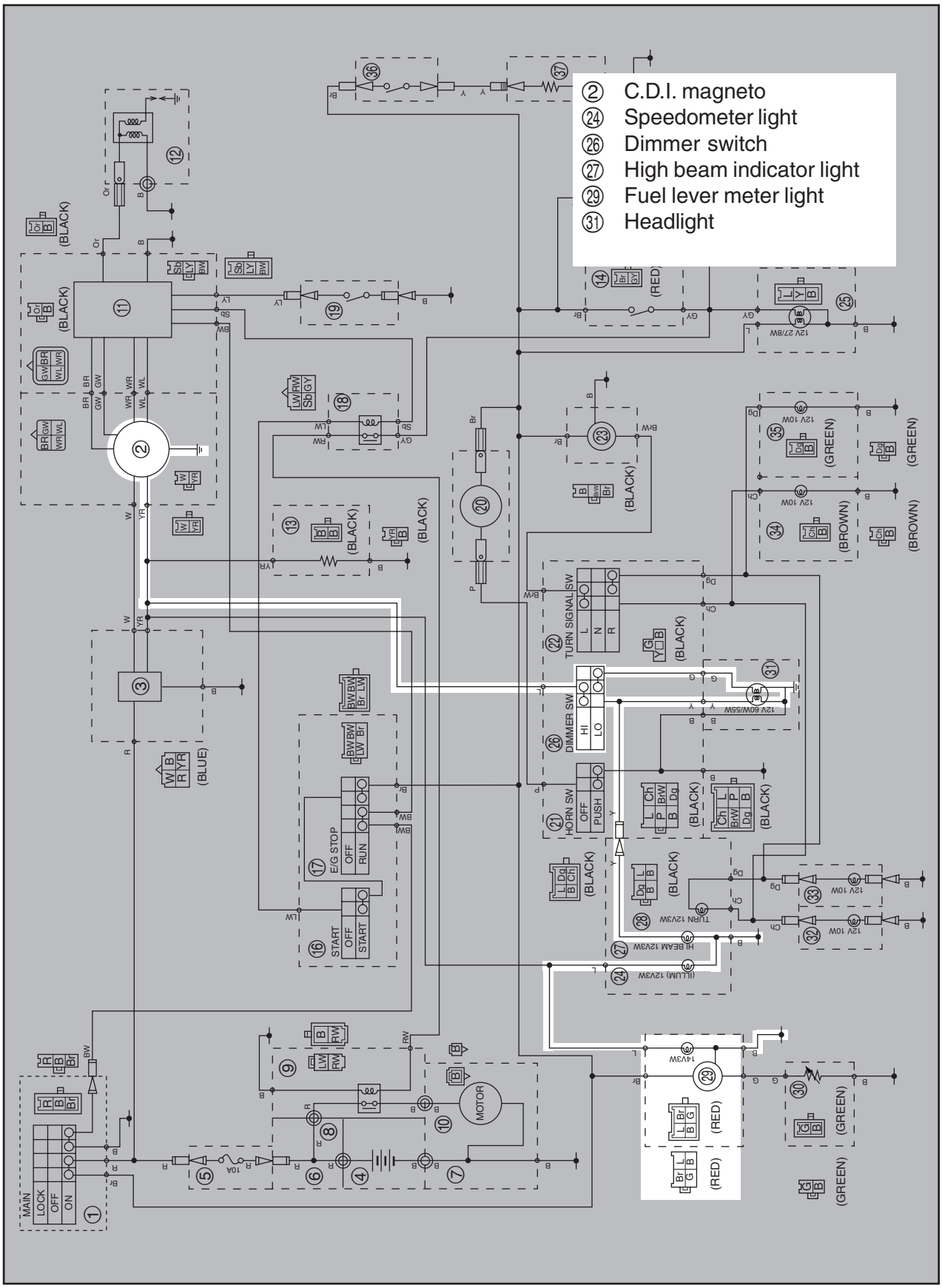
Replace the unit rectifier/regulator.

Properly connect or repair the charging system's wiring.

EAS00780

LIGHTING SYSTEM

CIRCUIT DIAGRAM



EAS00781
TROUBLESHOOTING

Any of the following fail to light: headlight, high beam indicator light, fuel level meter light or meter light.

Check:
1. main fuse
2. battery
3. main switch
4. dimmer switch
5. wiring connections
   (of the entire lighting system)

NOTE:
- Before troubleshooting, remove the following part(s):

1. Head light cover
2. Front turn signal light bracket
3. Leg shield 1
4. Rear varrier
5. Side cover (right)
6. Cover
7. Battery cover

- Troubleshoot with the following special tool(s).

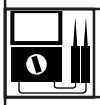
Pocket tester
90890-03132 (YU-03112-C)

EAS00738
1. Main fuse
- Check the fuses for continuity. Refer to "CHECKING THE FUSES" in chapter 3.
- Is the fuse OK?

YES → NO

Replace the 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

- 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.

EAS00784
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 → Check the condition of each of the lighting system's circuits. Refer to "CIRCUIT DIAGRAM".

NO → 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.
  Refer to "CHECKING THE BULBS AND BULB SOCKETS"
- Are the headlight bulb and socket OK?

YES → NO → Replace the headlight bulb, socket or both.

2. High beam indicator light bulb and socket
- Check the high beam indicator light bulb and socket for continuity.
  Refer to "CHECKING THE BULBS AND BULB SOCKETS"
- Are the high beam indicator light bulb and socket OK?

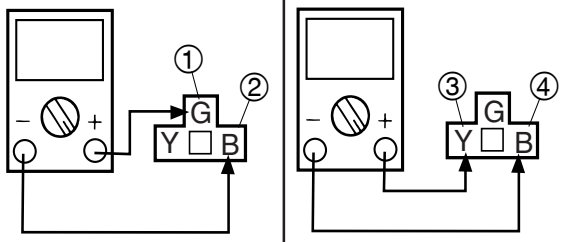
YES → NO → Replace the high beam indicator light bulb , socket or both.

3. Voltage

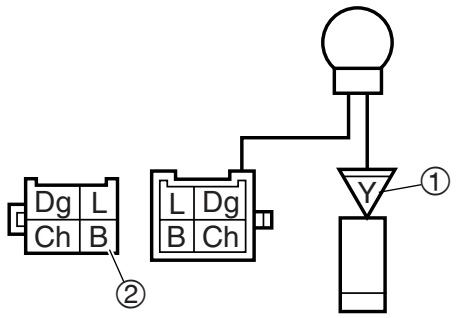
- Connect the pocket tester (DC 20 V) to the headlight and high beam indicator light couplers as shown.

When the dimmer switch is set to "≡D"
When the dimmer switch is set to "≡D"
Headlight coupler (wire harness side)

Headlight
Positive tester probe → green ①
Negative tester probe → black ②
Positive tester probe → yellow ③
Negative tester probe → black ④



High beam indicator light
Positive tester probe → yellow ①
Negative tester probe → black ②



- Set the main switch to "ON".
- Start the engine
- Set the dimmer switch to "≡D" or "≡D".
- Measure the voltage (DC 12 V) on the headlight coupler (wire harness side).
- Measure the voltage (DC 12 V) on the dimmer switch coupler (wire harness side) when the dimmer switch is set to "≡D".
- Is the voltage within specification?

YES

This circuit is OK.

NO

The wiring circuit from the main switch to the headlight coupler and hight beam indicator light are faulty and must be repaired.

EAS00754

4. Wiring

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

YES

Check the condition of each of the lighting system's circuits.
Refer to "CIRCUIT DIAGRAM".

NO

Properly connect or repair the lighting system's wiring.

EAS00789

2. The meter light fails to come on.

1. Meter light bulb and socket

- Check the meter light bulb and socket for continuity.
  Refer to “CHECKING THE BULBS AND BULB SOCKETS”
- Are the meter light bulb and socket OK?

YES

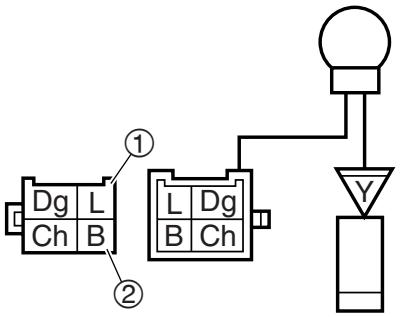
NO

Replace the meter light bulb, socket or both.

2. Voltage

- Connect the pocket tester (DC 20 V) to the meter 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 (DC 12 V) of blue 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.
Refer to “CIRCUIT DIAGRAM”.

EAS00841

3. Fuel level meter light

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

YES

NO

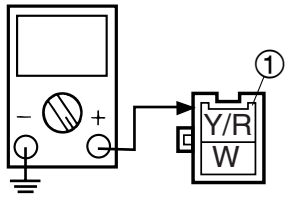
Replace the fuel level meter light bulb, socket or both.

EAS00748

4. Lighting coil resistance

- Disconnect the lighting coil coupler from the wire harness.
- Connect the pocket tester (Ω × 1) to the lighting coil terminal as shown.

Positive tester probe → yellow/red ①
Negative tester probe → ground

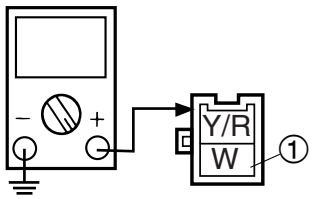


- Measure the lighting coil resistance.

Lighting coil resistance
0.28 ~0.42 Ω at 20°C
(between yellow/red and ground)

- Connect the pocket tester (Ω × 1)to the lighting coil terminal as shown.

Positive tester probe → white ①
Negative tester probe → ground



- Measure the lighting coil resistance.

Lighting coil resistance
0.32 ~0.48 Ω at 20°C
(between white and ground)

- Is the lighting coil OK?

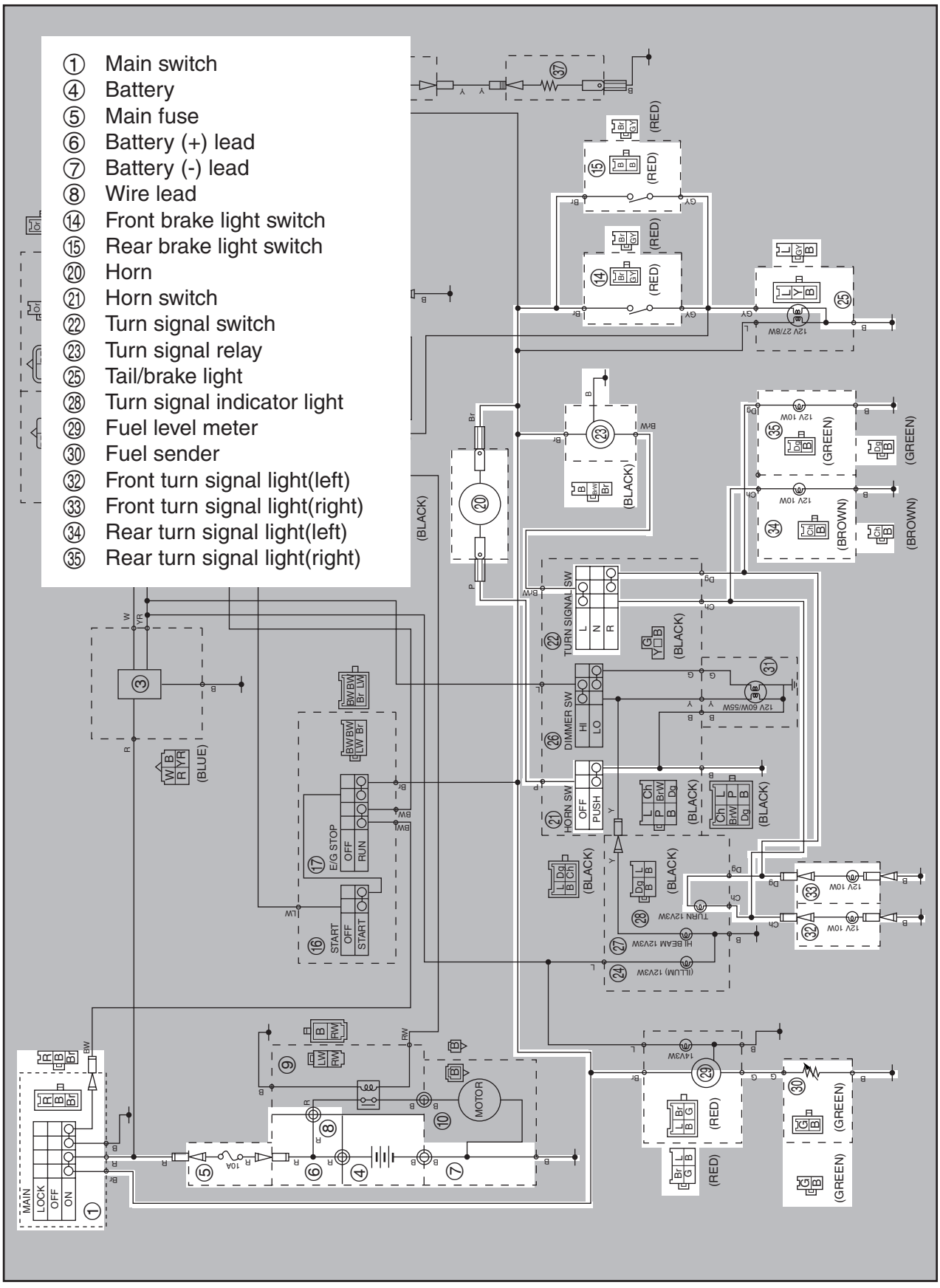
YES

NO → Replace the lighting coil.

EAS00793

SIGNALING SYSTEM

CIRCUIT DIAGRAM



EAS00794
TROUBLESHOOTING

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

Check:
1. mainfuse
2. battery
3. main switch
4. wiring connections
   (of the entire signaling system)

NOTE:
- Before troubleshooting, remove the following part(s):

1. Head light cover
2. Front turn signal light bracket
3. Leg shield 1
4. Rear carrier
5. Side cover (right)
6. Cover
7. Battery cover

- Troubleshoot with the following special tool(s).

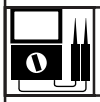
Pocket tester
90890-03132 (YU-03112-C)

EAS00738
1. Main fuse
- Check the main fuse for continuity. Refer to “CHECKING THE FUSES” in chapter 3.
- Is the fuse OK?

YES → NO

Replace the 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

- 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.

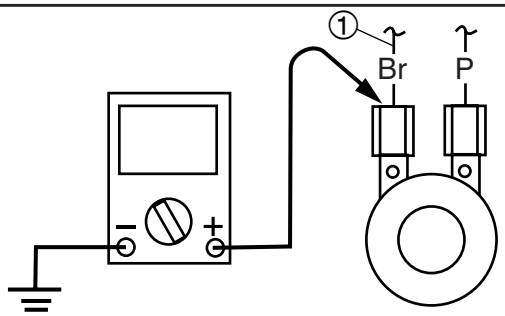
1. Horn switch
- Check the horn switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the horn switch OK?

YES ⇩ NO ⇩

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

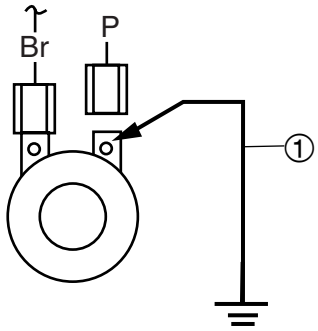


- Set the main switch to "ON".
- Push the horn switch.
- Measure the voltage (DC 12 V) of brown at the horn terminal.
- Is the voltage within specification?

YES ⇩ NO ⇩

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

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?

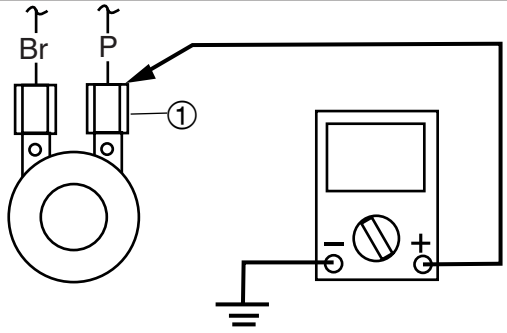


NO ⇩ YES ⇩

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 (DC 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.
     Refer to "CHECKING THE BULBS AND BULB SOCKETS"
   - 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?

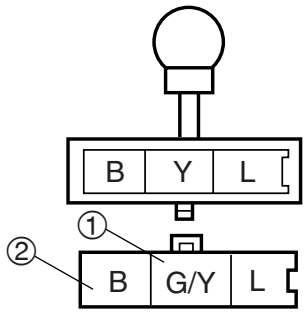
YES ⇩ NO ⇩

The wiring circuit from the main switch to the tail/brake light bulb connector is faulty and must be repaired. Refer to "CIRCUIT DIAGRAM".

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 (DC 12 V) of yellow 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. Refer to "CIRCUIT DIAGRAM".

EAS00799

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

1. Turn signal light and turn signal indicator light bulbs and sockets
   - Check the turn signal light bulb and socket for continuity.
     Refer to "CHECKING THE BULBS AND BULB SOCKETS"
   - Check the turn signal indicator light bulb and socket for continuity.
     Refer to "CHECKING THE BULBS AND BULB SOCKETS"
   - Are the turn signal light bulb and socket OK?

YES ⇩

NO ⇩

Replace the turn signal light and/or turn signal indicator 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?

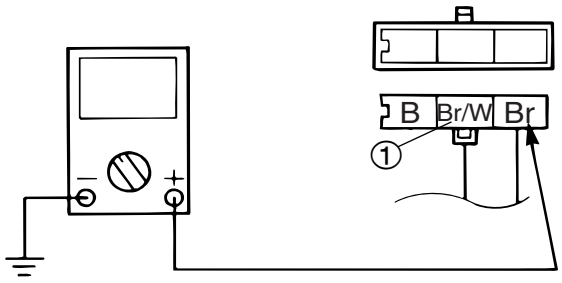
YES ⇩

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 (DC 12 V) on brown ① at the turn signal relay coupler (wire harness side).
   - Is the voltage within specification?

YES ⇩

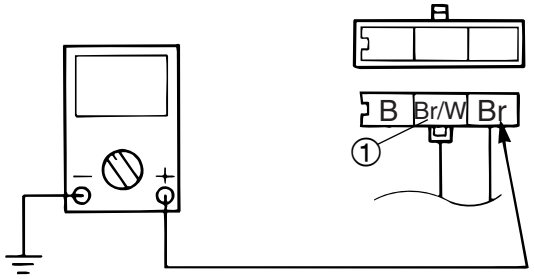
NO ⇩

The wiring circuit from the main switch to the turn signal relay coupler is faultyand must be repaired.
Refer to "CIRCUIT DIAGRAM".

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 (DC 12 V) on brown/white ① at the turn signal relay coupler (wire harness side).
●Is the voltage within specification?

YES

NO

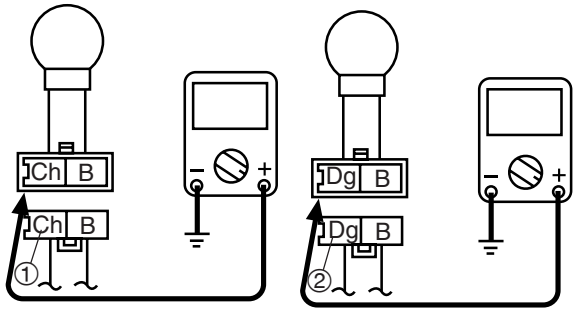
The turn signal relay is faulty and must be replaced.

5. Voltage

●Connect the pocket tester (DC 20 V) to the turn signal light connector or meter assembly coupler (wire harness side) as shown.

Turn signal light
Turn signal indicator 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



●Set the main switch to "ON".
●Set the turn signal switch to "⇦" or "⇨".
●Measure the voltage (DC 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.

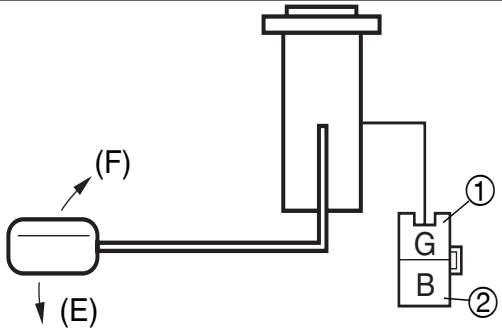
EAS00804

4. The fuel level meter fails to operate.

1. Fuel sender

- Remove the fuel sender from the fuel tank.
- Connect the pocket tester ($\Omega \times 1$) to the fuel sender coupler (wire harness side) as shown.

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



- Measure the fuel sender resistances.

Fuel sender resistance (up position F)($\Omega \times 1$)
4~10Ω at 20°C
Fuel sender resistance (down position E)($\Omega \times 10$)
90~100 Ω at 20°C

- Is the fuel sender OK?

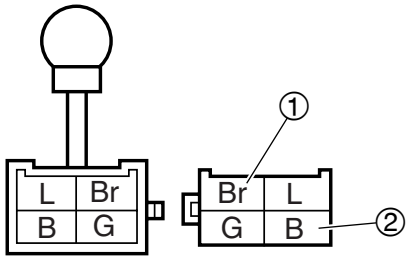
YES

NO → Replace the fuel sender.

2. Voltage

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

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



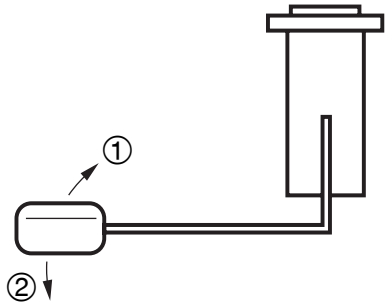
- Set the main switch to "ON".
- Measure the voltage (DC 12 V) of brown ① on the meter light coupler (wire harness side).
- Is the voltage within specification?

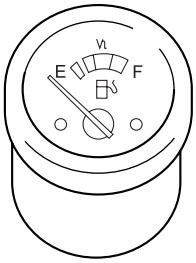
YES

NO → Check the wiring connections of the entire signaling system.
Refer to "CIRCUIT DIAGRAM".

3. Fuel level meter

- Set the main switch to “ON”.
- Move the float up ① or down ②.





- Check that the fuel level meter 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 meter needle move appropriately?

YES → This circuit is OK.

NO → Replace the fuel level meter.

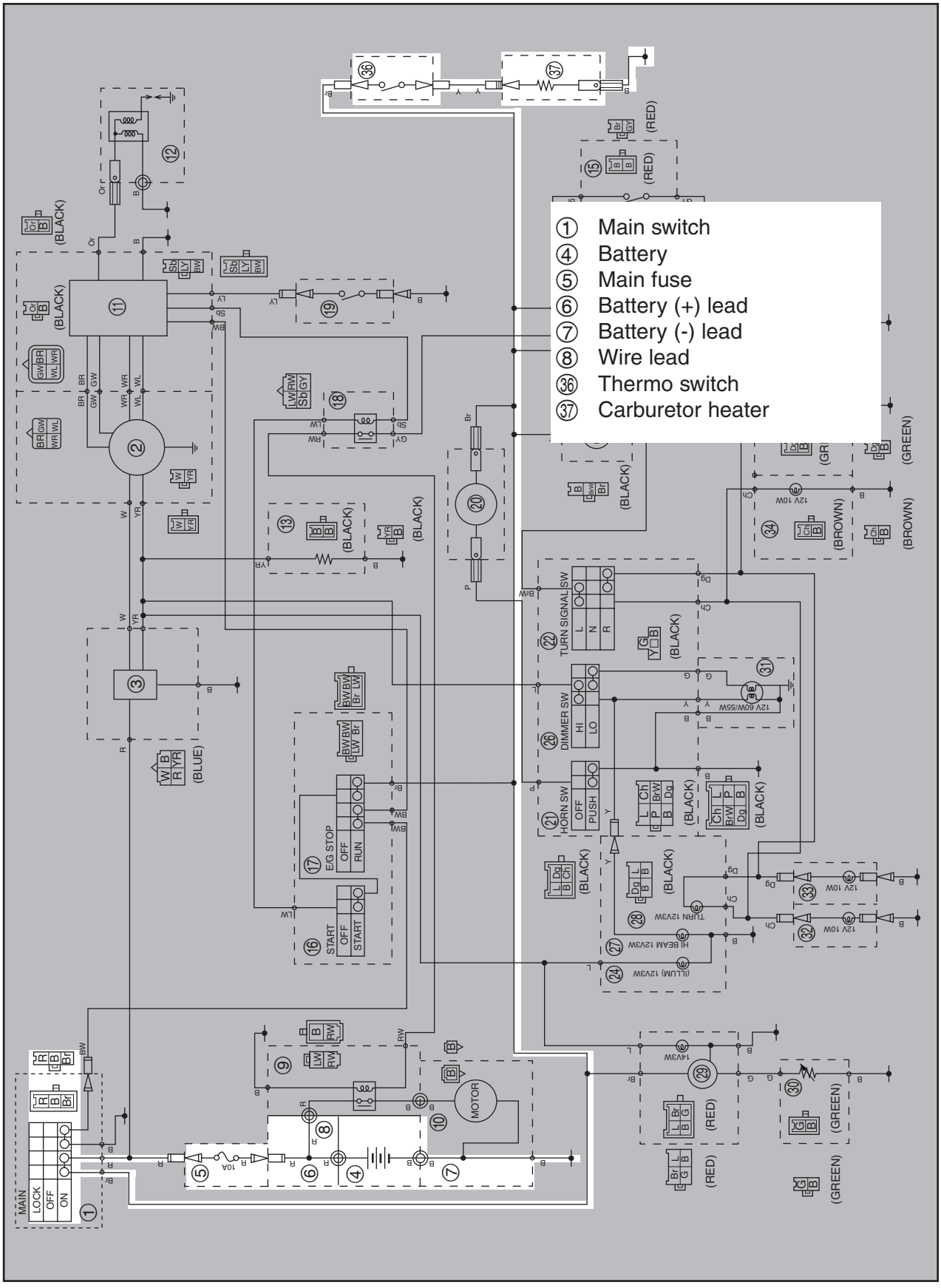
4. Wiring

- Check the entire signaling system’s wiring

EAS00820

CARBURETOR HEATING SYSTEM

CIRCUIT DIAGRAM



EAS00821
TROUBLESHOOTING

The carburetor heating system fails to operate.

Check:
1. Main fuse
2. Battery
3. Main switch
4. Thermo switch
5. Carburetor heater
6. Wiring connections
   (of the entire carburetor heating system)

NOTE:
- Before troubleshooting, remove the following part(s):

1. Head light cover
2. Front turn signal light bracket
3. Leg shield 1
4. Cover
5. Battery cover
6. Footrest board side cover mole(right)

- Troubleshoot with the following special tool(s).

Pocket tester
90890-03132 (YU-03112-C)

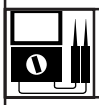
EAS00738
1. Main fuse
- Check the fuse for continuity.
  Refer to “CHECKING THE FUSES” in chapter 3.
- Is the fuse OK?

YES ⇩

NO ⇩

Replace the 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

- 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.

EAS00823

4. Thermo switch

- Remove the thermo switch from the thermo switch plate wire harness.
- Connect the pocket tester to the ($\Omega \times 1$) to the thermo switch ① as shown.

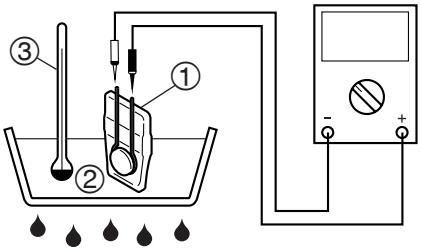
NOTE:

Make sure that the thermo switch terminals do not get wet.

- Immerse the thermo switch in a container filled with coolant ②.
- Place a thermometer③ in the coolant.
- Slowly heat the coolant, then let it cool down to the specified temperature.
- Check the thermo switch for continuity at the temperature indicated below.

Test step	Coolant temperature	Continuity
1	0 ~11 ± 3 °C	YES
2	More than16 ± 3 °C	NO
3*	16 ± 3 ~ 11±3 °C	NO
4*	Less than11 ± 3 °C	YES

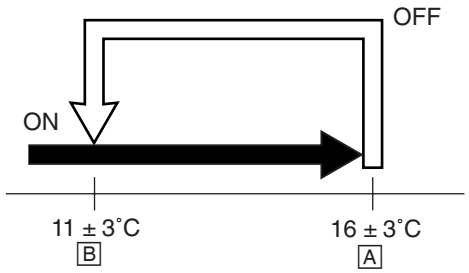
Steps 1 & 2: Heating phase
Steps 3 & 4: Cooling phase



⚠WARNING

- **Handle the thermo switch with special care.**
- **Never subject the thermo switch to strong shocks. If the thermo switch is dropped, replace it.**

A The coolant temperature sensor circuit is closed.
B The coolant temperature sensor circuit is open.



- Does the thermo switch operate properly?

YES ⇩ NO ⇩

Replace the thermo switch.

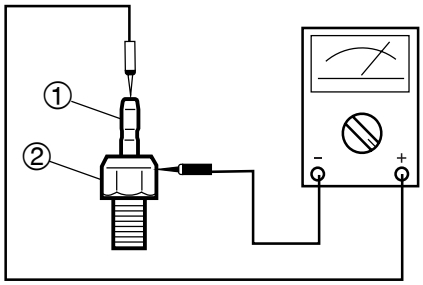
EAS00824

5. Carburetor heater

- Remove the carburetor heating element from the carburetor.
- Connect the pocket tester to the carburetor heating element as shown.

Positive tester probe → heating element ①
Negative tester probe → heating element body ②

- Measure the carburetor heater resistance.



Carburetor heating element resistance
30 Ω at 20°C

- Is the carburetor heating element OK?

YES ⇩ NO ⇩

Replace the carburetor heating element.

EAS00826

6. Wiring

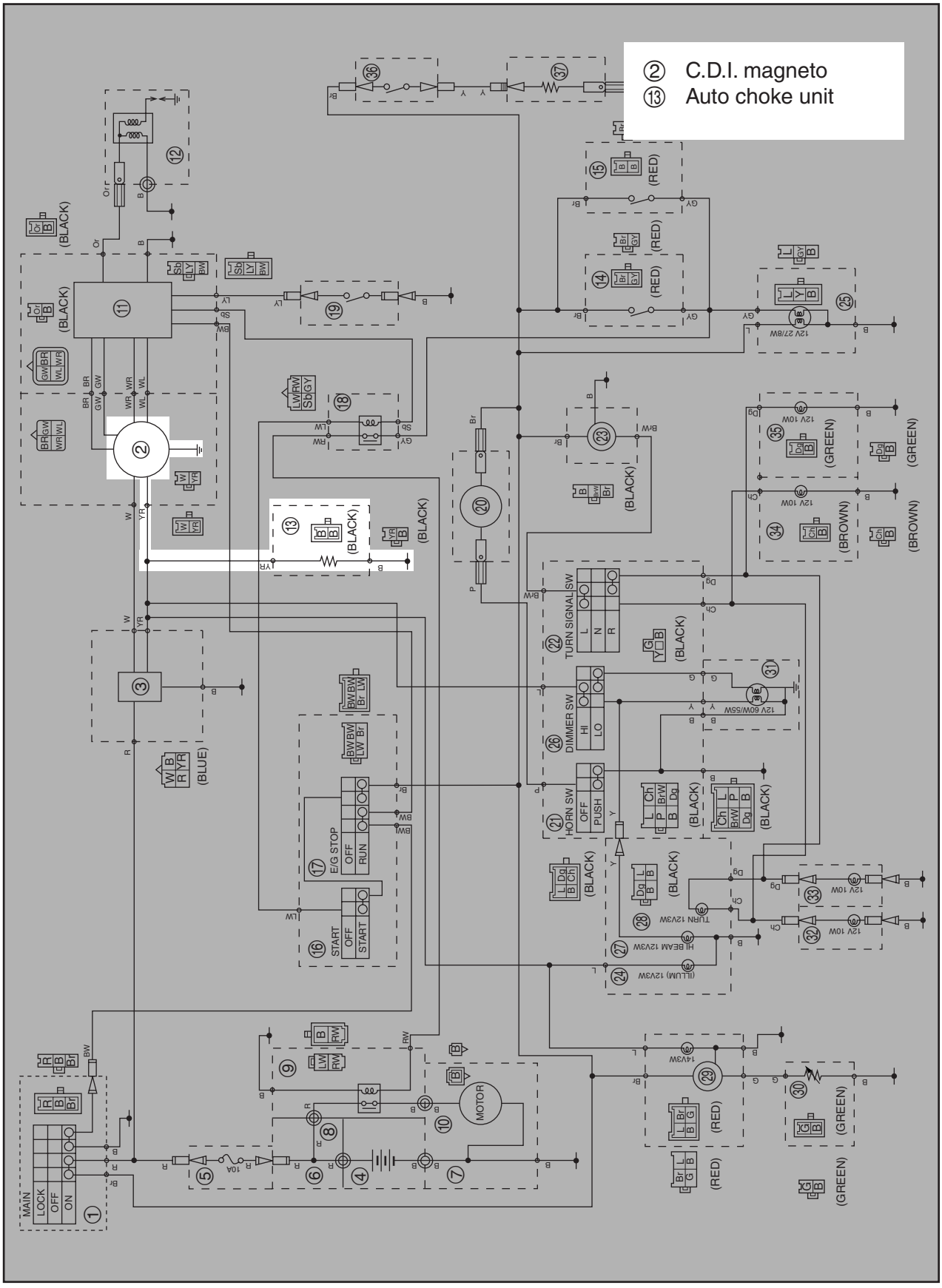
- Check the entire carburetor heating system's wiring.
  Refer to "CIRCUIT DIAGRAM".
- Is the carburetor heating system's wiring properly connected and without defects?

NO

Properly connect or repair the carburetor heating system's wiring.

AUTO CHOKE SYSTEM

CIRCUIT DIAGRAM



TROUBLESHOOTING

The auto choke system fails to operate.

Check:
1. Lighting coil resistance
2. Auto choke unit resistance
3. Wiring connections
   (of the entire auto choke system)

NOTE:
- Before troubleshooting, remove the following part(s):

1. Cover
2. Rear carrier
3. Side cover (right)

Troubleshoot with the following special tool(s).

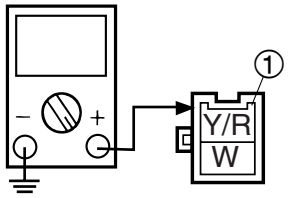
Pocket tester
90890-03132 (YU-03112-C)

EAS00748

1. Lighting coil resistance

- Disconnect the lighting coil coupler from the wire harness.
- Connect the pocket tester ($\Omega \times 1$) to the lighting coil terminal as shown.

Positive tester probe → yellow/red ①
Negative tester probe → ground

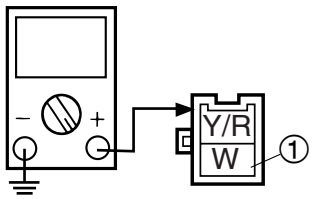


- Measure the lighting coil resistance.

Lighting coil resistance
0.28 ~0.42 Ω at 20°C
(between yellow/red and ground)

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

Positive tester probe → white ①
Negative tester probe → ground



- Measure the lighting coil resistance.

Lighting coil resistance
0.32 ~0.48 Ω at 20°C
(between white and ground)

- Is the lighting coil OK?

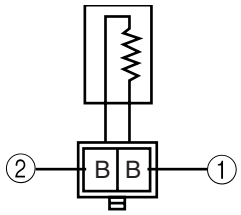
YES

NO → Replace the lighting coil.

2. Auto choke unit resistance

- Disconnect the auto choke unit coupler from wire harness.
- Connect the Pocket tester(Ω × 1) to the Auto choke unit coupler as shown.

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



- Measure the auto choke unit resistance.

Auto choke unit resistance
30 Ω at 20°C

- Is the auto choke unit OK?

YES

NO → Replace the auto choke unit.

EAS00826

3. Wiring

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

YES

NO → Properly connect or repair the auto choke system's wiring.

CHAPTER 8
TROUBLE SHOOTING

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EAS00844

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 FAILURES

ENGINE

Cylinder and cylinder head

- Loose spark plug
- Loose cylinder head or cylinder
- Damaged cylinder head gasket
- Damaged cylinder gasket
- Worn or damaged cylinder
- Incorrect valve clearance
- Improperly sealed valve
- Incorrect valve-to-valve-seat contact
- Incorrect valve timing
- Faulty valve spring
- Seized valve

Piston and piston ring

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

Fuel cock

- 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 installed pilot jet
- Clogged starter jet
- Clogged emulsion tube
- Improperly adjusted pilot screw

Auto choke unit

- Faulty starter plunger
- Faulty thermo switch

ELECTRICAL SYSTEMS

Battery

- Discharged 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

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

Ignition system
- Faulty C.D.I unit
- Faulty pickup coil
- Broken magneto rotor woodruff key

Switches and wiring
- Faulty main switch
- Faulty engine stop switch
- Broken or shorted wiring
- Faulty front and rear brake light switch
- Faulty start switch
- Faulty sidestand switch
- Improperly grounded circuit
- Loose connections

Starting system
- Faulty starter motor
- Faulty starter relay
- Faulty starting circuit cut-off relay
- Faulty starter clutch

EAS00846

INCORRECT ENGINE IDLING SPEED

ENGINE
Cylinder and cylinder head
- Incorrect valve clearance
- Damaged valve train components

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

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

Ignition system
- Faulty C.D.I. unit
- Faulty pickup coil
- Broken magneto rotor woodruff key

EAS00849

POOR MEDIUM-AND-HIGH-SPEED PERFORMANCE

Refer to “STARTING FAILURES”.

ENGINE
Air filter
- Clogged air filter element

Air intake system
- Bent, clogged or disconnected carburetor air vent hose
- Clogged or leaking air duct

FUEL SYSTEM
Carburetor
- Faulty diaphragm
- Incorrect fuel level
- Loose or clogged main jet
- Faulty accelerating pump

Fuel cock
- Faulty fuel cock

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

Clutch spring(s)
- Damaged clutch spring

Transmission gears
- Damaged transmission gear

CLUTCH SLIPS
Clutch shoe springs
- Damaged, loose or worn clutch shoe spring

Clutch shoes
- Damaged or worn clutch shoe

Primary sliding sheave
- Seized primary sliding sheave

POOR STARTING PERFORMANCE
V-belt
- V-belt slips
- Oil or grease on the V-belt

Primary sliding sheave
- Faulty operation
- Worn pin groove
- Worn pin

Clutch shoes
- Bent, damaged or worn clutch shoe

POOR SPEED PERFORMANCE
V-belt
- Oil or grease on the V-belt

Primary pulley weight(s)
- Faulty operation
- Worn primary pulley weight

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

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

Air filter
- Clogged air filter element

CHASSIS
Brakes
- Dragging brake

ELECTRICAL SYSTEMS
Spark plug
- Incorrect spark plug gap
- Incorrect spark plug heat range

Ignition system
- Faulty C.D.I. unit

EAS00859
POOR BRAKING PERFORMANCE

Disc brake
- Worn brake pad
- Worn brake disc
- Air in hydraulic brake system
- Leaking brake fluid
- Faulty brake caliper kit
- Faulty brake caliper seal
- Loose union bolt
- Damaged brake hose
- Oil or grease on the brake disc
- Oil or grease on the brake pad
- Incorrect brake fluid level

Drum brake
- Worn brake shoe
- Worn or rusty brake drum
- Incorrect brake camshaft lever position
- 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

EAS00860
FAULTY FRONT FORK LEGS

LEAKING OIL
- Bent, damaged or rusty inner tube
- Cracked or damaged outer tube
- Improperly installed oil seal
- Damaged oil seal lip
- Incorrect oil level (high)
- Loose damper rod assembly bolt
- Damaged damper rod assembly bolt copper washer
- Cracked or damaged cap bolt O-ring

MALFUNCTION
- Bent or damaged inner tube
- Bent or damaged outer tube
- Damaged fork spring
- Bent or damaged damper rod
- Incorrect oil viscosity
- Incorrect oil level

EAS00862

UNSTABLE HANDLING

Handlebar
- Bent or improperly installed handlebar

Steering head components
- Improperly installed upper bracket
- Improperly installed lower bracket (improperly tightened ring nut)
- Bent steering stem
- Damaged ball bearing or bearing race

Front fork leg(s)
- Uneven oil levels (both front fork legs)
- Unevenly tensioned fork spring (both front fork legs)
- Broken fork spring
- Bent or damaged inner tube
- Bent or damaged outer tube

Rear shock absorber assembly
- Faulty rear shock absorber spring
- Leaking oil

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 COME ON
- Wrong headlight bulb
- Too many electrical accessories
- Hard charging
- Incorrect connection
- Improperly grounded circuit
- Poor contacts (main or light 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 COME ON
- 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 COME ON
- 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
- Faulty battery

FAULTY LIGHTING OR SIGNALING SYSTEM

TRBL SHTG ?

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

YAMAHA MOTOR TAIWAN CO., LTD